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## PEOPLE'S REPUBLIC OF CHINA SCIENTIFIC ABSTRACTS

No. 185

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AERONAUTICAL KNOWLEDGE

AUTHOR: None

ORG: Hang-k'ung Chih-shih Journal

TITLE: "Announcement On the Subscription to This Journal"

SOURCE: Peking HANG-K'UNG CHIH-SHIH [AERONAUTICAL KNOWLEDGE] in Chinese No 10, Oct 77 p 3

ABSTRACT: "HANG K'UNG CHIH SHIH" [Aeronautical Knowledge] is a monthly journal published by the Chinese Aeronautical Society to make available to the general public the basic knowledge of aeronautical science and technology and to report on both foreign and domestic developments in aeronautics. The journal is distributed through all the post offices in the country. Presently the post offices are accepting subscriptions for the coming year; therefore, interested readers are urged to submit their subscription forms to the local post office. Because of limited manpower, we regret that retail sales or subscriptions of the journal cannot be handled by this office.

AUTHOR: None

ORG: None

TITLE: "A Chinese-made Small Airplane For Agriculture and Forestry"

SOURCE: Peking HANG-K'UNG CHIH-SHIH [AERONAUTICAL KNOWLEDGE] in Chinese No 10, Oct 77 p 2, front and back covers

ABSTRACT: In August 1977, a small airplane designed and built in this country to serve agriculture and forestry has been approved by the government for mass production. In addition to applications in farming and forest protection, this airplane can also be used for geological survey, fishery, short-range transportation, rescue operations and flight training. The special features of this airplane are its high reliability, high mobility and its low altitude and short take-off and landing capabilities. The important specifications of the airplane are as follows: power plant: two radial type piston engines; wing span: 17 m; wing area: 34 m<sup>2</sup>; length of fuselage: 12.017 m; empty weight: 2050 kg; take-off weight: 3250 kg; normal fuel weight: 210 kg; and payload: 800 kg. The front and back covers of this issue show respectively photographs of this airplane in flight and in its final stage of assembly.

AUTHOR: CH'U Yun [2806 0061]

ORG: None

TITLE: "Transporting Deep Sea Divers by Air"

SOURCE: Peking HANG-K'UNG CHIH-SHIH [AERONAUTICAL KNOWLEDGE] in Chinese No 10, Oct 77 pp 4-5 & 7

ABSTRACT: In many off-shore petroleum drilling operations, deep sea divers are needed to perform heavy and dangerous construction work. In the event a diver is injured or becomes ill under water he must be treated in a special pressurized cabin in order to avoid damage to his organs due to sudden de-pressurization. In a recent issue of the British journal "New Scientist," a scheme of transporting the deep sea divers by helicopter is proposed. The helicopter is equipped with a special pressurized cabin made of titanium alloys. The patient will be transported under a physician's care to a pressurized operating room in a nearby hospital. After treatment, the patient will remain in the operating room which is gradually de-pressurized until normal pressure is reached. A hospital equipped with a pressurized operating room is currently being constructed in the port of Dundee of Scotland.

AUTHOR: SHAN Fang [1472 2455]

ORG: None

TITLE: "Speech Recognition and Space Technology"

SOURCE: Peking HANG-K'UNG CHIH-SHIH [AERONAUTICAL KNOWLEDGE] in Chinese No 10, Oct 77 pp 5-6

ABSTRACT: Speech is a highly efficient method of human communication. The technique of speech recognition is a branch of pattern recognition which allows directing the operation of a high speed computer by voice commands. The basic functions of a speech recognition system include: acoustic classification and analysis of input speech, recognition and decision, and output. On the basis of historical development and complexity, speech recognition systems can be divided into three categories: 1) single phonem recognition; 2) continuous speech recognition; and 3) language understanding. In space applications, speech recognition has been used in voice-controlled pilot systems and interrogation-response systems.

AUTHORS: CHANG Pao-ch'en [1728 1405 6134]  
WANG Feng [3769 6265]

ORG: None

TITLE: "Temperature Field at the Exit of a Combustion Chamber"

SOURCE: Peking HANG-K'UNG CHIH-SHIH [AERONAUTICAL KNOWLEDGE] in Chinese No 10,  
Oct 77 pp 7-9

ABSTRACT: The temperature distribution at the exit of a combustion chamber is an important indicator of the performance of the combustion chamber. In this article, the authors use the annular type combustion chamber as an example to explain why exit temperature distribution is in general non-uniform. They also point out that in order to avoid excessive thermal load on the turbine blades, both the circumferential and radial temperature distributions should be such that the maximum temperature difference is less than 100 degrees C and the mean temperature is approximately 850 degrees C. Two methods of measuring the temperature field at the exit of a combustion chamber are also introduced, which are: the multi-point thermocouple method and the thermocouple mechanical scanning method.

AUTHOR: LU Yao-liang [7120 6460 5328]

ORG: None

TITLE: "Close-range Combat Missiles"

SOURCE: Peking HANG-K'UNG CHIH-SHIH [AERONAUTICAL KNOWLEDGE] in Chinese No 10,  
Oct 77 pp 10-13

ABSTRACT: The close-range combat missile is a high-mobility air-to-air missile developed within the past decade to meet the requirements of modern interceptors in close-range air battles. The first close-range combat missiles were built by the United States by modifying air-to-air missiles such as the "Sparrow" and the "Cobra" to reduce their minimum launch distance and to improve their mobility. Subsequently, France, England, West Germany, Norway, and the Soviet Union also developed their own models. There are basically two types of close-range combat missiles: aerodynamically controlled missiles and thrust vector controlled missiles. Compared with conventional air-to-air missiles, close-range combat missiles have the following special features: 1) new aerodynamic designs, 2) infrared guidance systems, 3) aerodynamic and thrust vector control techniques, and 4) new tactical capabilities such as small launch distance, versatility with regard to the carrier airplane, and the use of visual method of aiming.

AUTHOR: CH'EN Hsin-ts'ai [7115 9387 2088]

ORG: None

TITLE: "Air Suspended Sonar"

SOURCE: Peking HANG-K'UNG CHIH-SHIH [AERONAUTICAL KNOWLEDGE] in Chinese No 10, Oct 77 pp 14-16

ABSTRACT: Sonar is a surveillance device which detects the presence of submarines by transmitting and receiving ultrasonic waves under water. To improve its search efficiency, a sonar device may be suspended from a helicopter so its mobility is increased and its depth under water can be easily varied. In general, an air-suspended sonar system has the following basic components: 1) an underwater electro-acoustic energy conversion device; 2) a receiver; 3) a transmitter; 4) a suspension mechanism; 5) a display unit; 6) a control box; and 7) a power supply unit. A pictorial illustration of the air-suspended sonar system and its active and passive modes of operation is presented in insert No 1 of this issue.

AUTHOR: CH'EN Pu-shih [4453 0008 2514]

ORG: None

TITLE: "On Transport Airplanes" (Part 2)

SOURCE: Peking HANG-K'UNG CHIH-SHIH [AERONAUTICAL KNOWLEDGE] in Chinese No 10, Oct 77 pp 17-19

ABSTRACT: This is the conclusion of a two-part article discussing various types of transport airplanes. Specifically, the following types of airplanes are introduced: 1) medium size transport planes such as the Chinese "transport-5," the European "Air Cargo" and the Canadian "American Elks"; 2) large transport airplanes with various designs of cargo accommodations; 3) special airplanes for transporting large rockets and space vehicles; and 4) future transport airplanes which include such designs as super tankers, flying wings, and lifting bodies which are supported by both aerodynamic and buoyancy forces.



AUTHOR: LIU Mou-chi [0491 6180 0165]

ORG: None

TITLE: "Cranked Wing"

SOURCE: Peking HANG-K'UNG CHIH-SHIH [AERONAUTICAL KNOWLEDGE] in Chinese  
No 10, Oct 77 pp 19-21

ABSTRACT: A cranked wing is a modified swept wing with a triangular filler surface between the fuselage and the leading edge of the basic wing. It is designed to improve the aerodynamic characteristics of an airplane at large angles of attack. In this article, several different designs of cranked wings are introduced. The mechanism of increasing aerodynamic lift by utilizing and controlling flow separation over a cranked wing is explained. The phenomena of leading edge separation, leading edge vortices and lift forces generated by the vortices are also explained. In addition, other aerodynamic effects of the cranked wing such as reduction of induced drag and wave drag, increase in the critical Mach number, and increase in pitching moment are discussed.

AUTHOR: KAN Ch'ao [3927 6389]

ORG: None

TITLE: "Electronic Intelligence Collector"

SOURCE: Peking HANG-K'UNG CHIH-SHIH [AERONAUTICAL KNOWLEDGE] in Chinese  
No 10, Oct 77 pp 22-23

ABSTRACT: One of the important functions of an electronic computer is to store information into a data bank in the computer system and to retrieve the information upon request. The information retrieval capability of a computer can be used in a wide range of applications such as military intelligence, aircraft design, project monitoring and planning, banking systems, library search, and inventory control. The software that performs this function is called the data bank management system, which must meet the following requirements: general availability, high degree of reliability, high degree of security, and highly accurate and efficient retrieval operations. In the pictorial illustrations of this article, examples of using the data bank management system through remote terminals and telephone lines are shown.

AUTHOR: HO Chao-shou [0149 2156 7445]

ORG: None

TITLE: "Prevention of Aviation Frontal Sinusitis"

SOURCE: Peking HANG-K'UNG CHIH-SHIH [AERONAUTICAL KNOWLEDGE] in Chinese  
No 10, Oct 77 p 27

ABSTRACT: Frontal sinuses are small cavities connected to the nasal passage. If the sinuses of a pilot are blocked due to nasal infection or other causes, a negative pressure will be created during airplane descent, and the pilot may suffer headache, blurred vision, or secretion of blood with nasal mucus. To prevent aviation frontal sinusitis, a pilot should have regular check-ups of their ear and nose conditions; and any disease in these areas should receive immediate attention. A pilot with respiratory problems should refrain from flying; and any pilot should clean his nose before taking-off and be treated with nasal drops containing 1 percent ephedra vulgaris.

AUTHOR: KAO Yun-chou [7559 3057 1108]

ORG: None

TITLE: "Introduction to Fracture Mechanics"

SOURCE: Peking HANG-K'UNG CHIH-SHIH [AERONAUTICAL KNOWLEDGE] in Chinese  
No 10, Oct 77 pp 28-30

ABSTRACT: The fracture of airplane parts often leads to the failure of critical structures and causes serious accidents. Within the past few years, a new branch of science called fracture mechanics was developed to study the behavior of fractured materials under load. In this article, the questions of the safety margin of fractured materials and the expected life under certain load conditions are addressed. Specifically, the formulas for computing the stress strength factor of a fractured plate and for computing the critical fracture length corresponding to failure conditions are presented. In addition, a quantitative method of estimating the growth of a crack under alternating load conditions is described. A simple numerical example is presented to illustrate the procedures.

AUTHOR: None

ORG: None

TITLE: "Selected Paintings for the Fiftieth Anniversary of the Establishment of the People's Liberation Army"

SOURCE: Peking HANG-K'UNG CHIH-SHIH [AERONAUTICAL KNOWLEDGE] in Chinese  
No 10, Oct 77 color inserts

ABSTRACT: As part of the celebration of the 50th anniversary of the establishment of the People's Liberation Army, four oil paintings were selected to demonstrate the military achievements and spirit in China. These paintings are: 1) Chairman Mao participating in the ceremony for launching a new submarine; 2) Premier Chou inspecting a defense site which contains search and tracking radar and surface-to-air missiles on mobile launch units; 3) Chairman Hua visiting an earthquake damaged region; 4) a group of female pilots of a minority race.

3012

CSO: 4009

ACTA BOTANICA SINICA

AUTHOR: HU Shih-yi [5170 6684 1355]  
WANG Mo-shan [3769 2875 0810]  
HSU Li-yun [1776 7787 0061]

ORG: All of the Department of Biology, Peking University

TITLE: "Electron Microscope Observations on the Microsporogenesis in Male Sterile and Its Maintainer Lines of Wheat"

SOURCE: Peking CHIH-WU HSUEH-PAO [ACTA BOTANICA SINICA] in Chinese Vol 19 No 3, Sep 77 pp 167-171

TEXT OF ENGLISH ABSTRACT: 1. The process of microsporogenesis could be divided into three successive stages: the "shrinking" stage, the "small vacuole" stage and the "large vacuole" stage.

2. The abortiveness of the microspores of the male sterile line occurred mainly in the "large vacuole" stage, when all kinds of the cell-organelles became degenerated and disorganized. Some of the microspores, however, aborted earlier, i.e. in the "small vacuole" stage.

3. In the "small vacuole" stage, while the cell-organelles (mitochondria, plastids, etc.) of both the male sterile and its maintainer lines appeared essentially alike, the vacuolar system differed quite significantly. In the male sterile line, the

[continuation of CHIH-WU HSUEH-PAO Vol 19 No 3, Sep 77 pp 167-171]

microspore had fewer vacuoles as compared with those in the maintainer line, and the limiting membrane of some of the vacuoles was not sharply defined and seemed to be on the way of dissolution. The concentric membranous bodies formed by fragments of the endoplasmic reticulum, which were considered homologous to the lysosomes, were usually not sharply demarcated from the ground cytoplasm. It seemed that the lysing process caused by these membranous bodies played a role in the abortion of the microspores.

4. It is suggested that the changes of the vacuome in the "small vacuole" stage may possibly be the earliest sign of microspore abortion.

5. Before the abortion, the tapetal cells of the two lines did not show any notable differences. However, in the later stage, vacuoles containing concentric membranous bodies were seen only in the tapetal cells of the maintainer line.

\*Comrade KAO Hsin-tseng [7559 0207 2582] took part in portions of the work.

AUTHOR: None

ORG: Laboratory of Medicinal Plants, Institute of Materia Medica, Chinese Academy of Medical Sciences

TITLE: "Correlation Between Phylogeny, Chemical Constituents and Pharmaceutical Aspects of Plants and Applications in Drug Research (Part 1)"

SOURCE: Peking CHIH-WU HSUEH-PAO [ACTA BOTANICA SINICA] in Chinese Vol 19 No 3, Sep 77 pp 172-181

EXCERPT FROM ENGLISH ABSTRACT: This paper deals with the correlation between phylogeny, chemical constituents and pharmaceutical aspects of plants based on our own works related to its practical applications.

1. Application in the search of domestic resources for the imported drugs: A series of imported drugs has been successfully replaced by the domestic sources of closely allied plants as supported by the laboratory and even clinical investigations (Table 1). Several plants belonging to the genus Artemisia Sect. Seriphidium were found to be rich in santonin and are currently used as the raw materials for its commercial production.

2. Application in exploring new sources of some important medicinal herbs: The total tanshinone and cryptotanshinone, isolated from Salvia multiorrhiza, have been demonstrated to be antimicrobial active substances, thus 14 species of Salvia were examined. As the result it has been shown that S. przewalskii and several other

[continuation of CHIH-WU HSUEH-PAO Vol 19 No 3, Sep 77 pp 172-181]

Salvia plants with red-colored roots had a much superior activity (Table 3). Eight species of Schizandra have been investigated for their possible occurrence of the active principles (III-VI, etc.) along with their SGPT-lowering observations, while all of them exhibited the pharmacological effect except S. micrantha (Table 4). Our study has proved the high incidence of distribution of diosgenin in genus Dioscorea Sect. Stenophora.

3. Application in drug control and evaluation: While the Chinese traditional drugs "Mudanpi" and "Shaoyao" are both derived from the genus Paeonia, with the former mainly from Sect. Moutan and the latter from Sect. Paionia, their chemical criteria can be distinctly established (Table 7).

AUTHOR: None

ORG: Hsiao-liang Experimental and Extension Station of Soil Conservation of Tien-pai County, Kwangtung, and Laboratory of Geobotany, Kwangtung Institute of Botany

TITLE: "The Effects of Artificial Vegetation on Soil Conservation of Littoral Hilly Slopes"

SOURCE: Peking CHIH-WU HSUEH-PAO [ACTA BOTANICA SINICA] in Chinese Vol 19 No 3, Sep 77 pp 182-189

TEXT OF ENGLISH ABSTRACT: A tropical monsoon climate with high temperature, abundant rainfall and strong typhoons prevails in the littoral hilly slopes in Tien-pai county, Kwangtung. Thus top soil is seriously eroded to leave the slopes bare and plate-like. Since the liberation, some preliminary results have been achieved after the establishment of the artificial vegetations for more than 10 years.

1. The annual quantity of washed-off soil by water decreases from 15,000 to 2,945-4,400 m<sup>3</sup>/km<sup>2</sup>.
2. The water table of the mixed forest of Pinus-Eucalyptus and the pure forest of Pinus are both lifted up distinctly. The annual difference of water level in the forested lands varies within 1 m, and that of the bare ground is 2.37 m.
3. The micro-climate also changes: the variation range of the daily atmosphere temperature decreases, the soil temperature decreases even more and the relative

[continuation of CHIH-WU HSUEH-PAO Vol 19 No 3, Sep 77 pp 182-189]

humidity of the atmosphere increases significantly.

4. The effect of soil improvement differs with the type of vegetation. So far as the soil fertility is concerned, the mixed forests are more effective than the pure forests.

5. A 466-hectare area of artificial vegetation in our county has effectively conserved the soil from erosion, thus ensuring a high and stable yield of crops.

AUTHOR: WANG Ching-chu [3769 2417 7467]  
SUN Ching-san [1327 2417 0005]  
CHU Chih-ch'ing [2612 5627 3237]

ORG: All of Peking Institute of Botany, Academia Sinica

TITLE: "Effects of Culture Factors In Vitro On the Production of Albino Pollen Plantlets of Rice"

SOURCE: Peking CHIH-WU HSUEH-PAO [ACTA BOTANICA SINICA] in Chinese Vol 19 No 3, Sep 77 pp 190-199

TEXT OF ENGLISH ABSTRACT: The effects of some factors of the culture conditions on the production of albino pollen plantlets of rice were studied. During the sustained subcultures, a few calluses derived from somatic cells or pollens differentiated into green plantlets and a few albino plantlets as well. Most of the calluses, however, gave rise to plantlets with relatively consistent color differentiation. It was found that there was no regular correlation between the frequency of the albino pollen plantlets production and the culture factors. 2,4-D at high concentration (20 mg/l) was the only constituent of the culture medium which apparently could promote the production of albino plantlets. It was found that the temperature for culture appeared in close correlation with the production frequency of albino pollen plantlets, such as within a certain range, the higher the temperature was raised,

[continuation of CHIH-WU HSUEH-PAO Vol 19 No 3, Sep 77 pp 190-199]

the more albino plantlets were produced. There was no correlation, however, between the intensity of illumination and the production of albino plantlets. The origin of albino plantlets was discussed. Before the origin of albino plantlets has been understood completely, controlling the temperature strictly may decrease the frequency of albino plantlet formation.

AUTHOR: None

ORG: Nutrition Diagnosis Research Group, Nanking Institute of Soil Science, Academia Sinica

TITLE: "Total Amino Nitrogen Content in Rice Plant As a Diagnostic Index of Manuring"

SOURCE: Peking CHIH-WU HSUEH-PAO [ACTA BOTANICA SINICA] in Chinese Vol 19 No 3, Sep 77 pp 200-208

TEXT OF ENGLISH ABSTRACT: In this article, the total amino nitrogen content as a diagnostic index of nitrogen level in rice plant was studied. The selection and dose of buffer solution, the concentration and dose of developing agent, and the temperature and time for developing in the method of ninhydrin colorimetry of total amino nitrogen were tested under different conditions. The sensitive locations on rice plant were determined and the range of total amino-nitrogen content to indicate the nitrogen nutritional status of rice plant was identified by pot culture and field experiments in 1975-1976. The correlation between the amino-nitrogen and the total nitrogen content in the functional leaf of rice plant, and that between the amino-nitrogen content of rice plant in the stage of spikelet differentiation-formation and its yield were also investigated in the field. Based on the results, a simple method of diagnosis for the nitrogen level in rice plants was suggested.

AUTHOR: CHENG Kuang-chih [6774 0342 2784]  
LIANG Cheng [2733 1513]

ORG: Both of Laboratory of Plant Physiology, Yunnan Institute of Botany

TITLE: "Studies On Tissue Culture of Medicinal Plants II. Chemical Control of Callus Growth and Synthesis of Hyoscyamine and Scopolamine By Scopolia acutanqula Callus"

SOURCE: Peking CHIH-WU HSUEH-PAO [ACTA BOTANICA SINICA] in Chinese Vol 19 No 3, Sep 77 pp 209-215

EXCERPT FROM ENGLISH ABSTRACT: The callus was derived from the stem of Scopolia acutanqula C. Y. Wu et C. Chen in the year 1973.

The callus growth and synthesis of hyoscyamine and scopolamine by Scopolia acutanqula callus in culture were studied. The concentrations of 2,4-D (above 1.0 mg/l) promotes growth, but alkaloid (hyoscyamine and scopolamine) formation is retarded. At the concentrations of 2,4-D below 1.0 mg/l growth is retarded, while alkaloid synthesis is promoted. Both growth and alkaloid synthesis are distinctly promoted at NAA concentration of 2.0 mg/l. Callus growth and alkaloid synthesis are retarded by kinetin at various concentrations with maximum at 0.2 mg/l. The callus is first cultured on the medium in absence of kinetin for two or four weeks, then transferred



[continuation of CHIH-WU HSUEH-PAO Vol 19 No 3, Sep 77 pp 209-215]

to the medium containing 1.0 mg/l kinetin and subsequently cultured for a further two or four weeks. The alkaloid content increased significantly. The content of scopolamine may be increased to 0.495%.

AUTHOR: None

ORG: Second Group, Laboratory of Photosynthesis, Shanghai Institute of Plant Physiology

TITLE: "A Reexamination of Mitochondrial Complementation As a Test For Heterosis In Maize"

SOURCE: Peking CHIH-WU HSUEH-PAO [ACTA BOTANICA SINICA] in Chinese Vol 19 No 3, Sep 77 pp 216-221

TEXT OF ENGLISH ABSTRACT: Heterosis has been used with success in the production of maize and sorghum. In the search for combinations of parent lines giving marked heterosis, a method for rapid screening without resorting to actual crossing is needed.

McDaniel and Sarkissian claimed in 1966 that the 1:1 mixture of mitochondrial preparations from seedlings of parent lines gave higher oxidative phosphorylation rates compared with that of either parent line measured singly (on protein basis). Workers from many laboratories had repeated these experiments, but not all of them were able to confirm the claim.

We have made similar experiments using  $^{32}\text{P}$ -ATP formation method on six well-established combinations of maize known to show marked heterosis in yield. Only

[continuation of CHIH-WU HSUEH-PAO Vol 19 No 3, Sep 77 pp 216-221]

in two out of six combinations was mitochondrial complementation observed.

Since our preparations of mitochondria had an ADP/O ratio of 2, not far from that obtained by McDaniel and Sarkissian, they were of similar quality, though the loss of activity on standing occurred earlier with our preparations.

As mitochondrial complementation was not consistently observed in heterotic combinations, the validity of its use in screening is to be regarded with reservation, at least in maize.

AUTHOR: None

ORG: Sixth Laboratory, Peking Institute of Botany, Academia Sinica

TITLE: "Preparation of Chlorophyll d"

SOURCE: Peking CHIH-WU HSUEH-PAO [ACTA BOTANICA SINICA] in Chinese Vol 19 No 3, Sep 77 pp 222-225

TEXT OF ENGLISH ABSTRACT: Chlorophyll d preparation: Chlorophyll a dissolved in acetone was oxidized with aqueous potassium permanganate (3%). The course of the reaction was followed spectrophotometrically. When O.D 650 nm/O.D 687 nm reached ca. 2.5, the reaction was terminated by the addition of 2-3 volumes of ether. After filtration, the filtrate was washed 7-8 times with distilled water. The ether solution was evaporated, the pigment was dissolved in petroleum ether (b.p. 60-90°C)-ether-benzene (3:1:1). This solution was absorbed on a column of powdered sugar, and washed with the same solvent mixture. Pure chlorophyll d was obtained by column chromatography.

Absorption peaks of chlorophyll d (dissolved in ether) are located at 687 nm, 642 nm, 595 nm, 510 nm, 447 nm, and 390 nm.

The obtained chlorophyll d was successfully used for Q-switching of ruby laser and holography.

AUTHOR: None

ORG: Department of Chemistry, Hunan Agricultural College

TITLE: "Preliminary Analysis of Physiological and Biochemical Characteristics of the Hybrid Rice 'Nan U-2'"

SOURCE: Peking CHIH-WU HSUEH-PAO [ACTA BOTANICA SINICA] in Chinese Vol 19 No 3, Sep 77 pp 226-236

EXCERPT FROM ENGLISH ABSTRACT: In order to find out the physiological mechanism of hybrid rice, some physiological and biochemical functions of the hybrid strain "Nan U-2" were studied comparatively with the improved variety of ordinary late rice "Kuang Yu-73." Preliminary results obtained are summarized as follows:

1. The photosynthetic efficiency per unit of leaf area of "Nan U-2" was slightly lower than that of "Kuang Yu-73." The former's greater yield in grain output is due chiefly to its larger leaf area.
2. As compared with "Kuang Yu-73," "Nan U-2" showed lower respiration intensity, while its photorespiration rate was still lower.
3. The activity of the root system of "Nan U-2" was found to be somewhat higher than that of "Kuang Yu-73." "Nan U-2" also showed a more developed and intensive root system.
4. Utilization of nutrients and rate of food material transport of "Nan U-2"

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exceeded that of "Kuang Yu-73."

5. On the basis mentioned above, further physiological and biochemical analyses of "Nan U-2" as well as its three lines of parents were made. The results are summarized.

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CSO: 4009

CHINESE JOURNAL OF INTERNAL MEDICINE

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ORG: Department of Internal Medicine, Kuei-lin District Hospital, Kuangsi  
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TITLE: "Filariasis With Concurrent Hemo-pericarditis"

SOURCE: Peking CHUNG-HUA NEI-K'O TSA-CHIH [CHINESE JOURNAL OF INTERNAL MEDICINE]  
in Chinese No 4, 20 Jul 77 p 198

ABSTRACT: The forty-eight-year old farmer had been unable to lay on his back; his lower limbs were swollen; he coughed a little and had pain in his upper abdomen. Upon examination, his right testicle was as small as an olive, with a walnut-sized tumor in the scrotum. The left spermatic cord was enlarged to the size of a finger. Filariforms were found in his pericardial blood. EKG confirmed chronic pericarditis. Ten days of treatment with hetrazanum [diethyl-carbamazine] and carbarsonum brought complete cure.

AUTHOR: CH'EN Ta-kuang [7115 6671 0342]  
HU Chih-chien [5170 1807 1017]  
PAI Lin [4101 3829]  
LIU K'an-ch'en [0491 1030 5256]

ORG: All of Institute of Chinese (Mongolian) Medicine, Inner Mongolia Autonomous Region

TITLE: "Biochemical Bases of Symptomatic Classification of Coronary and Hypertension Diseases in Chinese Traditional Medicine"

SOURCE: Peking CHUNG-HUA NEI-K'O TSA-CHIH [CHINESE JOURNAL OF INTERNAL MEDICINE] in Chinese No 4, 20 Jul 77 pp 199-202

ABSTRACT: In order to increase the accuracy and scientific characteristic of the symptomatic diagnosis of Chinese traditional medicine, the substantive nature of symptomatic classification had been investigated on the basis of biochemistry and reported previously, indicating that several types of diseases classified to belong to "kidney-yang deficiency" were found to have obviously reduced urine-17 hydroxysteroid content. Later many reports confirmed identical findings in cases of chronic bronchitis, pyelonephritis, diabetes insipidus, etc. so long as the symptomatic diagnosis of Chinese traditional medicine for these cases were "kidney-yang deficiency." On the basis of the results of these

[continuation of CHUNG-HUA NEI-K'O TSA-CHIH No 4, 1977 pp 199-202]

reported studies, the authors carried out a study with 50 coronary patients and 27 hypertension patients. The Chinese traditional physicians proceeded with their classification of these patients according to the symptomatic technique. The physicians of Western medicine proceeded with 24-hour urine-17-hydroxysteroid determination (the improved Reddy technique,) blood cholesterol determination (the iron trichloride method,) triglyceride determination (the improved Van Handle method,) and the glucose tolerance curve of the same patients. The Physicians of either school did not know the results of the work of physicians of the other school. A third group of physicians gathered the results of both groups, compared them, and analyzed them. Preliminary summarization indicates a correspondent relationship in: (1) air-blood congestion and hypertriglyceridemia; (2) kidney-ying deficiency and reduction of glucose tolerance; (3) kidney-yang deficiency and obvious reduction of urine-17 hydroxysteroid. Data of classified symptomatic diagnoses of the Chinese traditional physicians and biochemical analyses are included.

AUTHOR: None

ORG: Physiology Teaching and Research Group, Patho-physiology Teaching and Research Group, Biophysics Teaching and Research Group, of Shanghai First College of Medicine; Shanghai Ninth Pharmaceutical Plant; Department of Internal Medicine, Chung-shan Hospital, Shanghai First College of Medicine; Shanghai Municipal Institute of Cardiovascular Diseases

TITLE: Preliminary Investigation in the Effects and the Theory of Intravenous Drip of Tan-shen for the Treatment of Coronary Heart Diseases"

SOURCE: Peking CHUNG-HUA NEI-K'O TSA-CHIH [CHINESE JOURNAL OF INTERNAL MEDICINE] in Chinese No 4, 20 Jul 77 pp 203-206

ABSTRACT: From January 1974 to October 1975, 56 coronary heart patients were treated with intravenous drip of Tan-shen [dried roots of *Salvia miltiorrhiza* Bge.] preparations, including an injection solution of the drug or an injection preparation of several Chinese traditional drugs including Tan-shen; both preparations were products of Shanghai Ninth Pharmaceutical Plant. The patients' peripheral micro-circulation and changes of blood flow of fingers and brain were observed. Results of the study indicate the treatment to be 88.6 percent effective for relieving angina pectoris and 66.6 percent effective for improving EKG signs. The data also indicate that blood-activating and congestion-dissolving drugs such as Tan-shen may have an action in influencing the distribution of blood among the various parts of the body.

AUTHOR: None

ORG: None

TITLE: "Glibenclamide"

SOURCE: Peking CHUNG-HUA NEI-K'O TSA-CHIH [CHINESE JOURNAL OF INTERNAL MEDICINE] in Chinese No 4, 20 Jul 77 p 206

ABSTRACT: Glibenclamide is an oral blood sugar reducing drug. It stimulates the  $\beta$  cells of the pancreas to release insulin to achieve the hypoglycemic action. Its hypoglycemic action is reported to be 200-250 times that of tolbutamidum (D-860.) Its toxicity is low. The dosages, possible side effects, and prohibitive conditions of this drug are described in the paper.

AUTHOR: None

ORG: Micro-circulation Research Team , Patho-physiology Teaching and Research Group, Shanghai First College of Medicine

TITLE: "Experimental Study on the Treatment of Impediment of Micro-circulation With Tan-shen"

SOURCE: Peking CHUNG-HUA NEI-K'O TSA-CHIH [CHINESE JOURNAL OF INTERNAL MEDICINE] in Chinese No 4, 20 Jul 77 pp 207-209

ABSTRACT: Thirty domestic rabbits were used in the study: twenty in the experiment; ten as control. Saline solution of high molecular dextran was used to induce micro-circulatory impediment in all the rabbits. An injection solution of Tan-shen [dried roots of *Salvia miltiorrhiza* Bge.] manufactured by Shanghai Ninth Pharmaceutical Plant was injected in the experiment group; saline water was injected in the control. Both groups were observed 20 minutes later for speed of blood flow, viscosity, and other micro-circulatory changes. It is the conclusion of the study that Tan-shen has the blood-activating and congestion-dissolving action. One of the mechanism of its action is through improving the micro-circulation.

AUTHOR: CHIANG Chao-k'ai [1203 0340 0418]  
KUAN Chao-min [7070 0340 3046]  
CHANG Chien-kuo [1728 1696 0948]  
CHUNG Wei-ming [0022 4850 2494]  
CHANG I-ch'ien [1728 4135 6197]

ORG: All of Ch'ang-ch'ing Engineering Command Department Workers' Hospital

TITLE: "Two Cases of Multiple Myositis"

SOURCE: Peking CHUNG-HUA NEI-K'O TSA-CHIH [CHINESE JOURNAL OF INTERNAL MEDICINE] in Chinese No 4, 20 Jul 77 p 209

ABSTRACT: This paper reports two case histories: (1) Ten days following surgery for ovarian tumor while the 27-year old patient was 3-month pregnant, she began to suffer from increasingly severe vomiting, nausea, and muscular pain. Muscles of her limbs were obviously atrophied. Treatment with massive doses of hormone brought gradual recovery in three weeks, but her EKG signs never improved. She died suddenly, three days after she was first able to get out of bed with assistance. Pathological examination proved acute multiple myositis. (2) The 27-year old man had been suffering from abdominal pain and fever for 5 years, and had been hospitalized several times with a tentative diagnosis of tuberculous peritonitis. He was brought to the hospital for extreme pain of the muscles of both limbs. Urine analysis and biopsy of limb muscles produced a diagnosis of myositis, and anti-tuberculous drugs were discontinued. All symptoms disappeared after one month's treatment with hormones. Follow-ups in half a year revealed no recurrence.

AUTHOR: None

ORG: Cardiovascular Group, Institute of Acupuncture, Chinese Academy of Traditional Medicine

TITLE: "Observation of Effects of Acupuncture Treatment for 44 Cases of Coronary Heart Diseases"

SOURCE: Peking CHUNG-HUA NEI-K'O TSA-CHIH [CHINESE JOURNAL OF INTERNAL MEDICINE] in Chinese No 4, 20 Jul 77 pp 210-212

ABSTRACT: Since 1975, 44 cases of various forms of arrhythmia due to angina pectoris and coronary diseases have been treated with acupuncture. Three groups of points were selected: Nei-kuan of the fifth thoracic vertebra, Chien-shih of the fourth thoracic vertebra, and T'an-chung and Nei-kuan combination. San-yin-chiao and Shen-men were added for those suffering from insomnia; Tsu-san-li was added for those with spleen and gastric symptoms. Needling sensitivity varied a great deal among the patients, and treatment effects were less than satisfactory for a few of the group having a dull sensitivity. After 1-3 months of acupuncture, EKG signs were obviously improved for eight of the group, improved for seventeen, to produce a total effective rate of 64.1 percent. Sample EKG changes are described in the paper.

AUTHOR: None

ORG: None

TITLE: "Haloperidol"

SOURCE: Peking CHUNG-HUA NEI-K'O TSA-CHIH [CHINESE JOURNAL OF INTERNAL MEDICINE] in Chinese No 4, 20 Jul 77 p 212

ABSTRACT: Haloperidol is a new antipsychopathic drug. Animal experiments indicate that it reduces animals' activity and capacity to react to stimulants. It also improves the effects of sleep-inducing agents, anesthetics, and tranquilizers. It also has anti-vomiting and weak anti-adrenaline action. The half lethal dose for mice is 20 mg/kg. When mice were fed a dose of 10 mg/kg for 134 days, no pathological changes of organs was observed. The Shanghai Municipal Mental Disease Prevention and Treatment Center used it to treat 21 cases of schizophrenia through oral administration. The dose was increased every other day, based upon the symptoms and side-effects, until the symptoms were obviously improved and the reactions to the drug were so obvious to make further increase impossible. A dose of 2-10 mg, 3 times daily was finally arrived at. It confirms with the generally recommended dosage.

AUTHOR: None

ORG: Chung-shan Hospital, Shanghai First College of Medicine; Shanghai Municipal Institute of Cardiovascular Diseases

TITLE: "Clinical Investigation in 74 Cases of Primary Cardiomyopathies: I. Congestive Type Primary Cardiomyopathies"

SOURCE: Peking CHUNG-HUA NEI-K'O TSA-CHIH [CHINESE JOURNAL OF INTERNAL MEDICINE] in Chinese No 4, 20 Jul 77 pp 213-217

ABSTRACT: Based upon currently available diagnostic conditions, there were a total of 74 cases of primary cardiomyopathies among the hospitalized patients between 1954 and 1974. Using common classification methods, the group may be divided into three types: 52 cases of the congestive type; 14 cases of the obstructive type; and 8 cases of the limited type. The first type is analyzed in this portion of the paper. Prognosis was very poor for this group. From the appearance of symptoms of shortness of breath, palpitation, edema of face and feet, fainting, nausea, hemoptysis, chest pain, cyanosis, etc. to death, the average was only 1.9 years. It is the conclusion of the paper that the current most effective measure is early discovery of cardiomegalia and suitable measures for preventing heart failure.



AUTHOR: None

ORG: First Department of Internal Medicine, Department of Pathology, the 191 Hospital, Chinese People's Liberation Army

TITLE: "Sudden Death From Renopathic Syndrome With Concurrent Embolism of Pulmonary Artery"

SOURCE: Peking CHUNG-HUA NEI-K'O TSA-CHIH [CHINESE JOURNAL OF INTERNAL MEDICINE] in Chinese No 4, 20 Jul 77 p 217

ABSTRACT: The 23 year old man was hospitalized after 20 days of dark urine and 6 days of general edema. Treatment with vitamin B<sub>1</sub>, a low salt diet, penicillin, hydrochlorothiazidum, etc. and a small daily dose of prednisone appeared to be very effective. Generally edema disappeared and the patient's spirit and appetite were obviously improved three weeks later, but he died suddenly. Pathological examination disclosed kidney disorder and pulmonary embolism. Complete case history is presented and discussed.

AUTHOR: None

ORG: Department of Cardial Internal Medicine, Shanghai Municipal Chest Hospital

TITLE: "Diagnosis of Cushion Type Atrioventricular Defect: With Clinical Analysis of 18 Cases"

SOURCE: Peking CHUNG-HUA NEI-K'O TSA-CHIH [CHINESE JOURNAL OF INTERNAL MEDICINE] in Chinese No 4, 20 Jul 77 pp 218-221

ABSTRACT: Pathological classification, clinical manifestations, and diagnostic identification of the various types of congenital atrioventricular defects are described. Of the group of 18 cases discussed, surgeries revealed mistaken diagnosis in nine.

AUTHOR: LI Te-tse [2621 1795 3419]  
CH'EN Chin-ch'ing [7115 3160 5464]  
WU Ch'ung-t'ang [0702 0112 0781]

ORG: All of Department of Internal Medicine Liu-chou Locomotive and Car Plant Workers' Hospital, Ministry of Railways

TITLE: "Clinical Observation of the Cardiokinetic and Diuretic Action of Dopaminum"

SOURCE: Peking CHUNG-HUA NEI-K'O TSA-CHIH [CHINESE JOURNAL OF INTERNAL MEDICINE] in Chinese No 4, 20 Jul 77 pp 222-224

ABSTRACT: Today, Dopaminum is clinically regarded as a relatively ideal anti-shock drug. The authors tried it on non-shock patients 30 times and obtained satisfactory cardiokinetic and diuretic effects. The patients included rheumatic heart diseases with edema, pulmonary heart diseases with persistent cardiac dysfunction, various forms of renopathies, etc. The Dopaminum used was the product of Peking Pharmaceutical Plant. The clinical data of these patients before and after the Dopaminum treatment are analyzed, with histories of two typical cases.

AUTHOR: PAO Hsing-hao [7637 5887 6275]  
KU Ch'uan-ming [7357 0356 2494]

ORG: Both of Chekiang Provincial Public Health and Epidemic Prevention Station

TITLE: "Serological Diagnosis of Leptospirosis With Charcoal Agglutination Test"

SOURCE: Peking CHUNG-HUA NEI-K'O TSA-CHIH [CHINESE JOURNAL OF INTERNAL MEDICINE] in Chinese No 4, 20 Jul 77 p 224

ABSTRACT: The charcoal agglutination test involves the treatment of leptospirora antigen with ultrasonic wave to cause it to adhere onto micrograins of active charcoal which are used to react with corresponding antibodies. Agglutination of the active charcoal micrograins are observed to determine the existence of antibodies. Serum specimens of 752 pairs (one from active stage and one from recovery stage) of clinically diagnosed leptospirosis from 18 different areas and 917 from patients of other diseases and healthy persons were tested with this technique. The results indicate that the technique is definitely valuable for early diagnosis of leptospirosis because it is fast and simple and there is no need of special equipment. The authors recommend its adoption by local basic medical units.

AUTHOR: None

ORG: Department of Infectious Diseases, Peking Military District General Hospital

TITLE: "Examination and Analysis of A-folds Skin Microcirculation of 400 Healthy Persons"

SOURCE: Peking CHUNG-HUA NEI-K'O TSA-CHIH [CHINESE JOURNAL OF INTERNAL MEDICINE] in Chinese No 4, 20 Jul 77 pp 225-227

ABSTRACT: Microcirculation means the circulation of capillaries which are between minute arteries and veins. Its direct or indirect relationship with tens of acute and chronic diseases has been discovered in the past decade to arouse the attention of medical circles here and abroad. Many techniques have been devised to examine its condition and to improve it for the purpose of prevention and treatment of a series of common diseases. As a part of efforts of opening new pathways in scientific research, from May to November 1975, 400 healthy soldiers, 18-28 years of age were used for direct microscopic observation of microcirculation of the A-fold of the left ring finger. The observed data are reported and analyzed in the paper.

AUTHOR: None

ORG: Isotope Laboratory, Chung-shan Hospital, Shanghai First College of Medicine

TITLE: "Observation of Long Term Effects of  $^{131}$ Iodine for the Treatment of Hyperthyroidism"

SOURCE: Peking CHUNG-HUA NEI-K'O TSA-CHIH [CHINESE JOURNAL OF INTERNAL MEDICINE] in Chinese No 4, 20 Jul 77 p 227

ABSTRACT: The thyroid gland can concentrate  $^{131}$ iodine and a massive injection of  $^{131}$ iodine into the thyroid gland can destroy its tissues to accomplish the effect of thyroidectomy. Beginning in 1970, the Chung-shan Hospital has, for 8 years, adopted this technique to treat hyperthyroidism. Of the 75 cases thus treated, follow-ups revealed that 69 cases have been cured. Surgery had to be performed for two of the remaining, 6 months after the  $^{131}$ iodine treatment, which produced no obvious effect. A subthyroid nodule was discovered in one case; recurrence of hyperthyroidism was found in another. In two, permanent hypothyroidism occurred. The phenomenon of yearly increasing rate of hypothyroidism, as reported in foreign countries, was not observed, however.

AUTHOR: None

ORG: Isotope Department, Capital Hospital, Chinese Academy of Medicine

TITLE: "Long Term Observation of <sup>131</sup>Iodine Treatment of Hyperthyroidism"

SOURCE: Peking CHUNG-HUA NEI-K'O TSA-CHIH [CHINESE JOURNAL OF INTERNAL MEDICINE] in Chinese No 4, 20 Jul 77 pp 228-231

ABSTRACT: From October 1958 to December 1964, 283 cases of hyperthyroidism were treated with <sup>131</sup>iodine. Of the group, 51 cases could not be contacted; nine died of causes other than thyroidism; surgery had to be performed on twelve due to failure of the <sup>131</sup>iodine treatment. Hyperthyroidism was cured for the remaining 211 cases. Follow-up records of the 211 cases varied from 10 years and 4 months to 16 years and 6 months, starting from the first day of oral administration of <sup>131</sup>iodine. Permanent hypothyroidism occurred to eleven of the group. Treatment and follow-up data of the 283 cases are analyzed in the paper.

AUTHOR: CH'EN K'o-chi [7115 0668 0370]

ORG: Hsi-wan Hospital, Chinese Academy of Traditional Medicine

TITLE: "A Discourse on Chinese Traditional Medical Treatment of Angina Pectoris of Coronary Heart Disease and Acute Myocardial Infarction"

SOURCE: Peking CHUNG-HUA NEI-K'O TSA-CHIH [CHINESE JOURNAL OF INTERNAL MEDICINE] in Chinese No 4, 20 Jul 77 pp 232-235

ABSTRACT: For more than 20 years, the author had the opportunity of learning from the old Chinese traditional physicians of the Hsi-wan Hospital, including JAN Hsueh-feng [0373 7185 1496], P'U Fu-chou [5543 6534 0719], YUEH Mei-chung [1971 5019 0022], CHAO Hsi-wu [6392 6932 2976], KUO Shih-k'uei [6751 1102 7608] et al. Their treatment of angina pectoris, acute myocardial infarction, and preinfarction syndrome varied, reflecting richness and diversity of the medical treasure-house of China. What the author learned from these old physicians and his own experience in the subject matter are discussed in the paper, including descriptions of Chinese traditional drugs and combination of drugs known to be effective for various symptoms related to these diseases.

AUTHOR: SUNG Heng-hsu [1345 1854 2485]

ORG: Department of Internal Medicine, Chao-yuan County People's Hospital,  
Shantung Province

TITLE: "Herpes Zoster With Concurrent Meningo-encephalitis and Myocarditis"

SOURCE: Peking CHUNG-HUA NEI-K'O TSA-CHIH [CHINESE JOURNAL OF INTERNAL MEDICINE] in Chinese No 4, 20 Jul 77 p 235

ABSTRACT: The 18-year old man was admitted on 31 October 1975 in convulsion and coma. He had been healthy until 3 days previously when herpes zoster was discovered on the left chest. The pain was lessened after external application of an iron rust ointment. In the morning of the day when he was hospitalized, he could not be awakened. EKG revealed myocarditis beside viral meningo-encephalitis and herpes zoster. He recovered 6 days later, following treatment with antibiotics, dehydrating agent, cardiokinetics, hormones, etc. The case history is described to emphasize the possibility of complications from herpes zoster.

AUTHOR: MENG Hsun-wu [1322 6598 0710]  
HSIA Li-ch'un [1115 6849 5028]

ORG: None

TITLE: "Brief Account of A Symposium-- Concerning Problems of Diagnosis and Treatment of Hyperthyroidism:II. Treatment Portion"

SOURCE: Peking CHUNG-HUA NEI-K'O TSA-CHIH [CHINESE JOURNAL OF INTERNAL MEDICINE] in Chinese No 4, 20 Jul 77 pp 236-241

ABSTRACT: Aside from a general recommendation of a high calory, high protein, high vitamin diet, and a suitable amount of tranquilizing agent, the paper discusses different types of treatment techniques for hyperthyroidism in separate chapters, including prolonged treatment with anti-thyroid drugs, surgical treatment, <sup>131</sup>iodine treatment, treatment with Chinese traditional medicine, treatment for eye protrusion, and treatment for heart disease due to hyperthyroidism. Experiences reported by various hospitals of various areas are included in the discussion under each treatment technique.

AUTHOR: KAO Yu-kung [7559 0645 1872]  
LIU Yung-ning [0491 3057 1337]  
CH'EN Ch'eng [7115 4453]

ORG: All of Second Hospital, Hopei University of New Medicine

TITLE: "Long Term Follow-Up Observation of <sup>131</sup>Iodine Treatment of Hyperthyroidism"

SOURCE: Peking CHUNG-HUA NEI-K'O TSA-CHIH [CHINESE JOURNAL OF INTERNAL MEDICINE] in Chinese No 4, 20 Jul 77 p 241

ABSTRACT: This paper reports the 5-13 years follow-up conditions of 241 cases of hyperthyroidism treated with <sup>131</sup>iodine, with emphasis on the side-effect of incidence of hypothyroidism. Of the group, 192 cases were cured; 25 cases were improved; there were 3 cases of recurrence and 5 cases remained the same as before the treatment. Hypothyroidism occurred to the remaining 16 cases. The rate of incidence of hypothyroidism at the end of one year after treatment was 3.3 percent; at the end of 9 years 9.5 percent, with an average yearly increase of 0.8 percent. In foreign countries, the reported yearly increase rate of hypothyroidism has been reported to be 1-6 percent, and the ten-year aggregate may be as high as 30.2-70 percent, much higher than the observed data here reported. There was no incidence of thyroid nodules, cancer, or leukemia among the group of 241 cases treated with <sup>131</sup>iodine, and the reproductive capacity was not observed to be affected by the treatment.

AUTHOR: LIN Ch'uan-hsiang [2651 0278 7534]

ORG: Department of Internal Medicine, First Hospital, Peking College of Medicine

TITLE: "Lecture--Several Problems Concerning the Treatment of Congestive Heart Failure"

SOURCE: Peking CHUNG-HUA NEI-K'O TSA-CHIH [CHINESE JOURNAL OF INTERNAL MEDICINE] in Chinese No 4, 20 Jul 77 pp 242-246

ABSTRACT: For the purpose of discussion, the paper is divided into the two chapters of patho-physiology of heart failure and its treatment. In the first chapter, the patho-physiological changes of myocardia and their effects on the heart as a pump for blood are described. In the second chapter, the different pharmacological actions of several digitalis type drugs; including strophanthinum K, digilanid C, digoxin, digitoxinum, and digitalis pulverata [leaves of digitalis] are described. The author recommends a comprehensive and reasonable formula of combining different types of drugs for the treatment of heart failure. The use of Chinese traditional drugs is not mentioned.

AUTHOR: HSU Ts'ai-p'ao [1776 6846 2613]  
LI Kuang-yao [2621 0342 3852]

ORG: Both of Department of Internal Medicine, First Hospital, the Third Military University of Medicine

TITLE: "Clinical Analysis of 17 Cases of Congenital Liver Cyst"

SOURCE: Peking CHUNG-HUA NEI-K'O TSA-CHIH [CHINESE JOURNAL OF INTERNAL MEDICINE] in Chinese No 4, 20 Jul 77 p 246

ABSTRACT: This paper reports 17 cases of congenital cyst of the liver, with emphasis on problems of diagnosis. Surgery, biopsy, x-ray, ultrasonic wave etc. confirmed the diagnoses of this group. Prognosis of this disease is usually good. Partial hepatectomy generally leaves no impediment to the liver function. There was one death of primary liver cancer in the group, however.

AUTHOR: P'ao Chen -en [2613 6966 1869]

ORG: Department of Internal Medicine, Second Hospital, Harbin University of Medicine

TITLE: "Cardiac Arrhythmias and Disturbances of Blood, Gas, Acids, and Alkalis"

SOURCE: Peking CHUNG-HUA NEI-K'O TSA-CHIH [CHINESE JOURNAL OF INTERNAL MEDICINE] in Chinese No 4, 20 Jul 77 pp 247-250

ABSTRACT: In the past two decades, the advancement and application of anti-arrhythmic drugs, electric shock, etc. and improved clarification of pathogenesis have greatly reduced the fatality rate of arrhythmias. This paper explains the clinical research studies on the relationship between cardiac arrhythmias and hypoxemia, hypercapnia, acidosis, and alkalosis. Extensive references from articles published in Japan and Western countries are used in the explanation.

AUTHOR: WANG Ts'ai-fu [3769 1752 4395]  
LI Ch'ing-t'ao [2621 3237 3447]  
KAO Hung-hsiang [7559 3163 4382]  
LIU Ching-hsin [0491 6975 1800]  
CHANG Chien-chung [1728 1696 0022]

ORG: WANG, LI of Department of Internal Medicine, KAO of Department of Radiology, LIU, CHANG of Department of Pathology, Peking Kung-an Hospital

TITLE: "Discussions of Clinical Pathology: The Ninth Case--Persistent Dull Pain Under Right Ribs and Fever"

SOURCE: Peking CHUNG-HUA NEI-K'O TSA-CHIH [CHINESE JOURNAL OF INTERNAL MEDICINE] in Chinese No 4, 20 Jul 77 pp 251-254

ABSTRACT: The 63-year old worker had suffered from a persistent dull pain under the right ribs for about one month; the pain became more severe and a fever developed for 3 days before he was hospitalized as an emergency case. x-ray indicated pulmonary metastatic tumor. Treatment with 5-Fu, antibiotics, cortisol, alamin, etc. produced no effects; the patient died. Postmortem produced a diagnosis of adrenocortical malignant cytoma, with extensive metastasis. Clinical problems concerning ameba hepatopostema, the pathology of malignant tumors, and the clinical diagnosis in this particular case are extensively discussed.

AUTHOR: CHOU Chih-pin [0719 5347 1755]

ORG: Public Health Center, Ho-k'ou District, Ta-wu County, Hupei Province

TITLE: "Preliminary Investigation in the Content of Fluid Infusion for Circulatory Failure in Case of Abrupt Epidemic Cerebrospinal Meningitis"

SOURCE: Peking CHUNG-HUA NEI-K'O TSA-CHIH [CHINESE JOURNAL OF INTERNAL MEDICINE] in Chinese No 4, 20 Jul 77 p 254

ABSTRACT: It is generally agreed that the content of fluid infusion for the stated purpose should generally be two parts of saline water to one part of 1/6 N sodium lactate. During the epidemic of 1966-1968, the author and colleagues treated 4 cases of late stage circulatory failure with either 250-500 ml of low molecular dextran (2 cases) or 1.0-1.5 g/kg of mannitol before the low sodium infusion; all four survived. Among the cases treated with infusion only, death occurred to some of respiratory failure when the blood pressure had begun to rise, to the others when the blood pressure failed to rise at all. The data of these few cases are presented here as reference for future study.



AUTHOR: SUN Jui-lung [1327 3843 7893]

ORG: EKG Office, Fou-wai Hospital, Chinese Academy of Medicine

TITLE: "Clinical EKG Analysis: The Seventh Case--Dual Acceleration of Heart Beat"

SOURCE: Peking CHUNG-HUA NEI-K'O TSA-CHIH [CHINESE JOURNAL OF INTERNAL MEDICINE] in Chinese No 4, 20 Jul 77 pp 255-256

ABSTRACT: When the 7-year old girl was treated for "pneumonia" at 6 months of age, a heart murmur was detected. She has had colds frequently and felt tired easily, but she participated in school activities and cyanosis never occurred. Recently, palpitation and shortness of breath became common. Following extensive examination, a diagnosis of congenital atrial septal defect with concurrent pulmonary stenosis was produced. Surgery corrected the defects and she was cured. The EKG signs of atrial as well as atrioventricular acceleration, similar to digitalis poison, before surgery and before any drug was administered in this case are discussed.

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CSO: 4009

LET THE NATURAL SCIENCES CONTEND

AUTHOR: None

ORG: Institute of Agricultural Machinery, Machinery Research Institute,  
First Ministry of Machine Industry

TITLE: "Chairman Hua Leads Us to Advance Toward Agricultural Mechanization"

SOURCE: Peking TZU-JAN K'O-HSUEH CHENG-MING [LET THE NATURAL SCIENCES CONTEND]  
in Chinese No 2, 8 Apr 77 pp 1-3

ABSTRACT: This article cites the epic deeds of Chairman Hua's leading the peasants to advance toward agricultural mechanization during his 20 years in Hunan Province. In accordance with Chairman Mao's instructions and on the basis of personal on-the-spot investigations and studies amidst reactionary obstructions, he planned and instituted the construction of provincewide agricultural machine repair and manufacturing plants, electric power irrigation systems, small scale nitrogenous fertilizer equipment, and the establishment of the Hunan Tractor Plant, and subsidiary cement plants, lime plants and a network of agricultural machinery stations, besides promotion of new agricultural techniques. With this spirit and concern, he is now leading the nation to fundamentally realize nationwide agricultural mechanization by

[continuation of TZU-JAN K'O-HSUEH CHENG-MING No 2, 8 Apr 77 pp 1-3]

1980 demanded by the 1971 National Agricultural Mechanization Conference sponsored by the State Council.

AUTHOR: None

ORG: T'ang-shan Earthquake Investigation Team, Academy of Architectural Engineering, State Construction Commission

TITLE: "A Discussion on Earthquake-proof Construction from the T'ang-shan Earthquake"

SOURCE: Peking TZU-JAN K'O-HSUEH CHENG-MING [LET THE NATURAL SCIENCES CONTEND] in Chinese No 2, 8 Apr 77 pp 4-9

ABSTRACT: Based on an analysis on the degree of destruction by the T'ang-shan earthquake on single and multi-storied industrial plant buildings, multi-storied brick structures, tall buildings, rural housing, chimneys and water towers, and underground air raid shelters and foundations, a discussion is made on the importance of establishing correct design and planning, understanding the effect of earth movement on building destruction, intensifying field survey and selection, developing new earthquake-proof construction materials, strengthening building structures, exploiting underground constructions, and assuring quality workmanship.

AUTHOR: CHUNG P'ing [6945 1627]

ORG: None

TITLE: "The Truth was Usurping the Party and Power, Not 'Servility to Things Foreign'"

SOURCE: Peking TZU-JAN K'O-HSUEH CHENG-MING [LET THE NATURAL SCIENCES CONTEND] in Chinese No 2, 8 Apr 77 pp 10-11

ABSTRACT: Exposing the "gang of four's" intrigue to usurp the party and power by accusing the late Premier Chou of promoting "servility to things foreign," the author analyzes the significance of the key policy of buying complete sets of technical equipment, developing oceangoing shipping enterprises, and pragmatic learning of advanced foreign technology to hasten the reconstruction and modernization of China as initiated by Chairman Mao, and executed accordingly by Premier Chou; and how the "gang of four" distorted the facts to usurp the party and power.

AUTHOR: CHENG Wen [6774 5113]

ORG: None

TITLE: "'Gang of Four's' 'Support of Contention' was a Fraud"

SOURCE: Peking TZU-JAN K'O-HSUEH CHENG-MING [LET THE NATURAL SCIENCES CONTEND]  
in Chinese No 2, 8 Apr 77 pp 12-13

ABSTRACT: The authors reveals some incidences of the "gang of four's" fraudulent "support of contentions" on one hand, and obstructions to opinions and publications on the other hand. The incidences revealed include the gang's handling of the publications of a debate on a certain genetics problem, and their repeated corrections and withholding of certain articles to counter Chairman Mao's severe criticism of the gang's trampling of the literary field, that had resulted in a serious shortage of poetry, prose, novels and review publications.

AUTHOR: Reporter of this journal

ORG: Liao-ning T'ieh-ning Agricultural College Great Criticism Group

TITLE: "Exposing the Lie of 'The Blank Paper Hero'"

SOURCE: Peking TZU-JAN K'O-HSUEH CHENG-MING [LET THE NATURAL SCIENCES CONTEND]  
in Chinese No 2, 8 Apr 77 pp 14-16

ABSTRACT: This article reports a joint investigation by this journal and the great criticism group of Liao-ning T'ieh-ning Agricultural College on the "gang of four's" much publicized events of "the blank paper hero" Chang T'ieh-sheng's [1728 6993 3932] operation for horse rectocolic disease. Actually, one horse died after the operation, while another two were finally rescued by veterinary teachers and students of the college after Chang's incompetent operations. Although Chang was nominally enrolled in the said college, he spent barely one year in the college mostly engaged in political activities instead of studying.

AUTHORS: K'O Ming [2688 7686]  
CHUNG Wei-nung [6945 3634 6593]

ORG: None

TITLE: "Some Viewpoints on Cultivation System Reformation"

SOURCE: Peking TZU-JAN K'O-HSUEH CHENG-MING [LET THE NATURAL SCIENCES CONTEND]  
in Chinese No 2, 8 Apr 77 pp 17-20

ABSTRACT: The authors stress that development of agricultural machinery should be adapted to the interplanting of multiple crops; that agriculture, pastoral industry, return of byproducts and stalks to the soil, and application of biological and chemical fertilizers should be well coordinated to improve soil fertility; that certain crops should be promoted in formerly considered "forbidden" districts with improved cultivation technique, and due consideration to the geographical environment; and that cultivation of multiple crops should be taken as a whole, not as individual tasks.

AUTHOR: K'O Li [2688 3810]

ORG: None

TITLE: "Relation of Cultivation System Reformation to Knowing and Reforming Nature"

SOURCE: Peking TZU-JAN K'O-HSUEH CHENG-MING [LET THE NATURAL SCIENCES CONTEND]  
in Chinese No 2, 8 Apr 77 pp 21-23, 13

ABSTRACT: The important role of corn in multiple crops interplanting, the introduction of spring rape from Tsinghai to Laoning, and the transplantation of Heilungkiang soybeans in southern China are described to illustrate how knowledge of the advantageous climatic resources of light, heat and atmosphere and its reformation can be fully utilized and exploited in the current cultivation system reformation for higher crop yield. A discussion is also made on the selection of well-matched crop combination, reasonable arrangement and planning of multiple crops' interfield structure, and correct harmonizing of intercrop growth to achieve the optimal results of careful and intensive cultivation of the interplanting of multiple crops.

AUTHOR: HAO Ch'iang [3185 1730]

ORG: This Journal

TITLE: "A Summary of the Discussion on the Reformation of Cultivation System"

SOURCE: Peking TZU-JAN K'O-HSUEH CHENG-MING [LET THE NATURAL SCIENCES CONTEND]  
in Chinese No 2, 8 Apr 77 pp 24-26

ABSTRACT: This article summarizes the contrasting opinions expressed in a discussion sponsored by this journal on the problems encountered in the reformation of the cultivation system that include: 1) the realization of the "all-around development with foodgrains as the key link" policy; 2) relations between reformation and agricultural mechanizations; 3) land utilization and soil culture; and 4) the forms of planting to be adopted. It is concluded that any solution to the problems must be based upon the principles of the reformation of the cultivation system with due regard to local characteristics, and successful experiences of others.

AUTHOR: None

ORG: This Journal

TITLE: "General Reformation of Cultivation System in the Northern Region of China"

SOURCE: Peking TZU-JAN K'O-HSUEH CHENG-MING [LET THE NATURAL SCIENCES CONTEND]  
in Chinese No 2, 8 Apr 77 pp 27, 20

ABSTRACT: This article summarizes the fast advances in the reformation of the cultivation system in northern China that has brought the tremendous expansion of multiple cropping areas, and vast increase in grain production in recent years. The success of the reformation of cultivation system is attributed mainly to: 1) extension of the cultivation of such early-ripening summer crops as soybean, oil sunflower, corn and rice as multiple crops, with fast increase in the multiple cropping area; 2) broaden the cultivation of such companion crops as corn, cotton, sweet potato and peanut in wheat fields; 3) promotion of the broad strip interplanting system; and 4) massive culture and transplantation of field crop seedlings.

AUTHOR: CH'EN Kuo-ta [7115 0948 6671]

ORG: Hunan Institute of Geotectology and South Central Mineralogy College's  
Department of Geology

TITLE: "The Geodepression Region -- A New Architectonic Unit"

SOURCE: Peking TZU-JAN K'O-HSUEH CHENG-MING [LET THE NATURAL SCIENCES CONTENT]  
in Chinese No 2, 8 Apr 77 pp 28-32

ABSTRACT: Following a discussion on the failure of the geosyncline-platform theory to explain the architectonic crustal development and ore-formation in eastern China, the author suggests that the architectonics of the region may have developed linearly beyond the realm of the geosyncline and platform stages, with a general tendency of spiralling upwards, and that the active region and the "stable" region may have intertransformed into a new geodepression region that exhibits the heretofore unexplained architectonic phenomena in eastern China. A discussion is finally made on the importance of extensive mapping of these geodepression regions in China for research on mineral formation, structure and prospection.

AUTHOR: YEN Shih [0917 1395]

ORG: Institute of Geomechanics

TITLE: "A Discussion With K'o Ch'ün [2688 5028] -- Some Contention on Geomechanics"

SOURCE: Peking TZU-JAN K'O-HSUEH CHENG-MING [LET THE NATURAL SCIENCES CONTENT]  
in Chinese No 2, 8 Apr 77 pp 33-39

ABSTRACT: Disputing K'O Ch'ün's article entitled "Some Problems on Developing the Geomechanics Theory," the author points out K'o's confusion and misinterpretation of Li Szu-kuang's [2621 0934 0342] original thesis on geomechanics with regard to the relationship between "mechanical analysis" and "historical analysis," the matrix structure and the strata structure, uniformity and non-uniformity, and the genesis of crustal movement. A review is also made on the tremendous achievement in geological research, as well as mineral prospecting and exploration in China since the liberation due to the correct understanding and application of geomechanics founded by Li Szu-kuang.

AUTHOR: MAO Ch'ung-chieh [3029 1504 2638]

ORG: Institute of Geology, Chinese Academy of Sciences

TITLE: "Where is the Substance of the Divergency?"

SOURCE: Peking TZU-JAN K'O-HSUEH CHENG-MING [LET THE NATURAL SCIENCES CONTEND]  
in Chinese No 2, 8 Apr 77 pp 40-44

ABSTRACT: Based on Li Szu-kuang's [2621 0934 0342] original thesis on geomechanics, and Chairman Mao's and Friedrich Engels' philosophical treatise on the contradiction between building and reformation, the relativity of the nonuniformity of rock medium, the relationship between matrix base and cover strata, and the energy source of tectonic movement, the author analyzes the article entitled "Some Problems on Developing the Geomechanics Theory" published in No 2 1976 of this journal to show how one-sided and prejudiced it is, and that the substance of the article is in fact idealistic, conventional and serves things foreign, far apart from the true essence of Li Szu-kuang's geomechanics.

AUTHOR: None

ORG: Hunan Institute of Geotectonics

TITLE: "Recent Application, Research or Introduction of the Geodepression Mineral Forming Theory Abroad"

SOURCE: Peking TZU-JAN K'O-HSUEH CHENG-MING [LET THE NATURAL SCIENCES CONTEND]  
in Chinese No 2, 8 Apr 77 pp 45-46, 39

ABSTRACT: This article reviews the publications by various geologists of the Soviet Union, Korea, Finland, Brazil and the United States from 1963 to 1976 advocating Ch'en Kuo-ta's idea to add a new third unit of geodepression or active region to the already established units of geosyncline and platform regions that explains certain formerly unexplained tectonic movement and the occurrence of rare, nonferrous ores in certain regions. Besides proving its validity, the new theory has also been applied to satisfactorily solve some pending problems in metallurgy around the world, while some conferences were specially convened in Soviet Russia to discuss the tectonic physical, chemical and mineral-forming characteristics of the newly added third geodepression unit.



AUTHOR: CHANG Chin-wen [1728 6930 2429]

ORG: None

TITLE: "Divisibility of Points and Nonstandard Analysis"

SOURCE: Peking TZU-JAN K'O-HSUEH CHENG-MING [LET THE NATURAL SCIENCES  
CONTEND] in Chinese No 2, 8 Apr 77 pp 47-54

ABSTRACT: From a discussion on the divisibility of points due to the existence of infinitesimal decimals that leads to the development of nonstandard analysis in mathematics, the author shows from the standpoint of philosophy and science, how the conception of the divisibility of points and nonstandard analysis can solve the many heretofore unsolved problems of logic when based on the indivisibility of points and standard analysis in mathematics, as well as its opening of new approaches to function space, theory of probability, fluid mechanics, quantum mechanics, and theoretical physics.

AUTHOR: YUAN Ming [5913 5492]

ORG: Workers University, Peking Electric Power Construction Company

TITLE: "Nonstandard Analysis and Its Application"

SOURCE: Peking TZU-JAN K'O-HSUEH CHENG-MING [LET THE NATURAL SCIENCES  
CONTEND] in Chinese No 2, 8 Apr 77 pp 55-56

ABSTRACT: Following a brief review from A. Robinson's first proposal of the basic conception of nonstandard analysis in 1960, its growing application to the theory of numbers in algebra, the Lie group, topology, functional analysis, theory of probability, fluid mechanics, quantum mechanics, theory of quantum fields, and its coordination into calculus textbooks, the author introduces its fundamental conception, and its characteristic approach to the quantitative relationship and the forms of space in the universe based on adopting the system of real numbers  $\mathbb{R}$  as a continuum. Two examples are given to illustrate its application to quantum mechanics and the  $\delta$ -function in engineering. It is reported that the conception of nonstandard analysis has been coordinated into the teaching of calculus in China with good success.

AUTHORS: YANG Hu-t'ien [2799 5706 1131]  
CHOU Hsiao-han [0719 1430 1383]  
CHENG Hsiu-ch'un [6774 4423 2504]

ORG: All of First Shanghai People's Hospital

TITLE: "Preliminary Understanding of the Treatment of Acute Leukemia"

SOURCE: Peking TZU-JAN K'O-HSUEH CHENG-MING [LET THE NATURAL SCIENCES CONTEND]  
in Chinese No 2, 8 Apr 77 pp 57-59, 66

ABSTRACT: Summarizing their experiences of how 63.73 percent of 91 cases of acute leukemia was being relieved, the authors discuss the importance and theoretical bases of some key factors in the treatment of such disease, namely: 1) correct understanding of both the symptoms and the causes of the disease, and their comparative degree of seriousness and urgency to determine the course of the treatment; 2) administration of anti-cancer drugs according to the respective characteristic leukemia cell growth at the G<sub>1</sub>, S, G<sub>2</sub> and M stages of the cell cycle; and 3) application of the dialectics of "weakness" and "strength" for a coordinated treatment and therapy.

AUTHOR: TS'AI Shu-mo [5591 2885 2875]

ORG: None

TITLE: "Some Options on the Treatment of Late Stage Cancer"

SOURCE: Peking TZU-JAN K'O-HSUEH CHENG-MING [LET THE NATURAL SCIENCES CONTEND]  
in Chinese No 2, 8 Apr 77 pp 60-62, 70

ABSTRACT: Maintaining that late stage cancer can be cured, the author emphasizes the priority of attacking the disease by constitutional treatment with selected effective anticancer drug or drugs, in coordination when necessary with localized radiation or surgical treatment according to the characteristics of the type and stage of the cancer, with due consideration to the degree of weakness of the patients' constitution, and how to care for them. It is reported that due to joint intensive efforts, and coordination of western and traditional Chinese medical treatment of such diseases in China, the rate of cure has reached about 90 percent for late villoma, 60 percent for third stage cervical carcinoma, and 50 percent for acute lymphatic leukemia.

AUTHOR: LIU Chia-hsiang [0491 0857 3276]

ORG: None

TITLE: "Dialectic Relationship of Nurturing the Positive and Expelling the Evils in the Treatment of Cancer"

SOURCE: Peking TZU-JAN K'O-HSUEH CHENG-MING [LET THE NATURAL SCIENCES CONTEND]  
in Chinese No 2, 8 Apr 77 pp 63-66

ABSTRACT: Based on an analysis on the principle of nurturing the positive and expelling the evils, their inter-relationship, and applications in the traditional Chinese treatment of cancer, the author stresses the prime importance of nurturing the positive over expelling the evils in the treatment, while prescribing according to the types of constitutional weakness, symptoms, and of course of disease. Herbal ingredients against different types of cancer, and various types of constitutional weaknesses are introduced. Of the 108 cases of late stage lung cancer so treated, short-term effectiveness was claimed to have reached 56 percent. Thirty-nine survived, some as long as 8 years. Immunological techniques have also been applied in some related experiments.

AUTHOR: WANG Chi-sheng [3769 2817 4141]

ORG: None

TITLE: "Heed the Effect of Psychological Factor in Cancer Therapy"

SOURCE: Peking TZU-JAN K'O-HSUEH CHENG-MING [LET THE NATURAL SCIENCES CONTEND]  
in Chinese No 2, 8 Apr 77 pp 67-68

ABSTRACT: Based on a review of some ancient traditional Chinese medical recordings concerned with cancer cases, which were disease-caused or influenced by mental depression and other psychological factors, and some investigative statistics and biological experiments that confirm it, the author stresses the prime importance of fully arousing the subjective initiative and confidence of cancer patients to conquer cancer besides using medical treatments.

AUTHOR: WANG Teng [3076 3397]

ORG: None

TITLE: "Contentions on Some Cancer Treatment Problems"

SOURCE: Peking TZU-JAN K'O-HSUEH CHENG-MING [LET THE NATURAL SCIENCES CONTEND]  
in Chinese No 2, 8 Apr 76 pp 60-70

ABSTRACT: Following a review on the contentions over the importance and advantages of treating cancer by surgery, chemotherapy, radiation, immunology, and traditional Chinese medicine, the author advocates the coordination of western and traditional Chinese medicine, as evidenced by the accomplishments so far achieved in China in the coordinated treatment of cervical cancer, lung cancer, esophagus cancer, nasopharyngeal cancer, and villosus epicytoma.

AUTHOR: None

ORG: Institute of Architectural Intelligence, Academy of Architectural Engineering, State Building Commission

TITLE: "Some Measures of Architectural Earthquakeproofing Abroad"

SOURCE: Peking TZU-JAN K'O-HSUEH CHENG-MING [LET THE NATURAL SCIENCES CONTEND]  
in Chinese No 2, 8 Apr 77 pp 71-73

ABSTRACT: This article introduces some architectural anti-earthquake measures adopted abroad, namely: 1) recognition of the destructive effects of earthquakes on buildings and their foundation soils; 2) zoning and grading of architectural earthquake-prone regions, and the establishment of anti-earthquake design and planning standards; and 3) enforcement of anti-earthquake architectural planning which includes selection of building sites; selection of building materials, and improvement of the anti-earthquake properties of all types of architectural structures.

AUTHOR: SHIH Yen [4258 6056]

ORG: None

TITLE: Preliminary Study on Kirin Meteorite Shower and Its Scientific Significance"

SOURCE: Peking TZU-JAN K'O-HSUEH CHENG-MING [LET THE NATURAL SCIENCES CONTENTD]  
in Chinese No 2, 8 Apr 77 pp 74-76

ABSTRACT: A study of five specimens of meteorites which fell over Kirin on 8 March 1976 jointly conducted by the Changchun Geological College and the Kirin Provincial Geological Institute concludes that: 1) the chemical compositions of the Kirin meteorites, other meteorites, and the earth are quite uniform, and so must be other matter of the world; 2) since the isotopic age of the Kirin meteorites, other meteorites, as well as the earth and the moon are nearly the same, they must all belong to a unified solar system with a common genetic history; 3) the successive variations of chemical compositions and optical properties of the principal minerals in the Kirin meteorites and their structural characteristics confirm their multistaged, complicated formation process; and 4) the Kirin meteorites should be considered as precious cosmic samples and new materials for research on the origin of the solar system.

AUTHORS: LIANG Ku [2733 7357]  
OU Ch'ing [3917 3237]

ORG: None

TITLE: "Contentions on Some Problems Concerned With the Origin of Mankind"

SOURCE: Peking TZU-JAN K'O-HSUEH CHENG-MING [LET THE NATURAL SCIENCES CONTENTD]  
in Chinese No 2, 8 Apr 77 pp 77-78

ABSTRACT: The authors summarize some controversial opinions on the origin of mankind with regard to: 1) the meaning of labor; 2) the transitional stages; 3) the boundary between man and ape; 4) the development period of the various human characteristics, and their interrelationships; 5) the differentiation of the developing stages of primitive societies; and 6) the internal and external factors in the transformation from ape to man.

11,206  
CSO: 4009

AUTHOR: LI Kang [2698 0474]

ORG: None

TITLE: "Fracture Dynamics and Its Development in China"

SOURCE: Peking TZU-JAN K'O-HSUEH CHENG-MING [LET THE NATURAL SCIENCES CONTEND]  
in Chinese No 3, 4 Jun 77 pp 27-32

ABSTRACT: Fracture dynamics became established in the later part of the 1950's as a new science to study materials with fractures, structural strength, and the principles of enlargement of fractures. It was introduced to China in 1970, by the Academy of Steel and Iron of the Ministry of Metallurgy, and other units of science and technology to meet the urgent needs of the national economy and defense construction. Following studies and applications, the First National Exchange Conference of Fracture Dynamics was held in Peking in October 1974. It was attended by mostly beginners, however, and the dozen or so papers were delivered by a handful research units. The second conference of the subject matter was held in November 1976, with 138 participant units and 110 papers, representing the achievements in the application of the new science for formulating reasonable quality standards, determining structural safety, and analyzing accidents, etc. This paper includes a brief discussion of the foundation of fracture dynamics and its contribution to a new understanding of fractures in materials.

AUTHOR: None

ORG: Steel Reinforcements Group, Academy of Construction of the Ministry of Metallurgical Industry

TITLE: "Strenght and Elasticity of Steel Reinforcements"

SOURCE: Peking TZU-JAN K'O-HSUEH CHENG-MING [LET THE NATURAL SCIENCES CONTEND]  
in Chinese No 3, 4 Jun 77 pp 33-35

ABSTRACT: In recent years, the 45Si<sub>2</sub>Mn heat treated high strength threaded steel reinforcements had been experimentally manufactured in China to substitute high carbon steel wires and some medium strength alloy steel reinforcements in construction members. The cost was lower and the production was simpler, but simultaneous breaking often occurred during storage. Research was carried out with Feng-t'ai Bridge Plant, Peking First Steel Mill, and Tientsin Steel Wire Plant to determine the relationship between the strength and the fracture elasticity and the relationship between several factors of heat treatment and fracture elasticity. The problems were finally understood and corrected. Now, this type of steel reinforcements made in China have a quality surpassing the level of some steel reinforcements made in foreign countries. The process of studying these relationships and the understandings are explained.

AUTHOR: None

ORG: Ta-lien Locomotive and Car Plant, Ministry of Railways

TITLE: "New Ways of Improving the Quality of Crankshaft"

SOURCE: Peking TZU-JAN K'O-HSUEH CHENG-MING [LET THE NATURAL SCIENCES CONTEND]  
in Chinese No 3, 4 Jun 77 pp 36-38

ABSTRACT: With the support of brother units and under the guidance of leaders of various levels, the members of the Ta-lien Plant, since the cultural revolution, designed and successfully manufactured a 4,000 horsepower internal combustion engine. Molybdenum copper alloy nodular graphite cast iron was used to make the crankshaft of the diesel engine. This was a new thing. For the purpose of guaranteeing the safety and reliability of the crankshaft, the party committee decided to carry out experimental studies in fracture dynamics and the work began in 1974 and proceeded to completion in 3 stages. The first stage was devoted to learning the theories and techniques of fracture dynamics to determine the fracture elasticity of the nodular iron crankshaft. In the second stage, curves of relationship between life span and size of defect under different stress conditions were established, based on principles of fracture dynamics. The knowledge gained in these stages was applied in the third stage, and nitridation treatment was applied to the crankshaft judged to be above the defect curve before it was installed. After more than 2 years of testing, the products proved to be very satisfactory.

AUTHOR: None

ORG: Metal Office, Metal Chemistry Center, Academy of Sciences, Ministry of Railways

TITLE: "'Revival' of the Moving Axis of the Ch'ien-chin Type Locomotives"

SOURCE: Peking TZU-JAN K'O-HSUEH CHENG-MING [LET THE NATURAL SCIENCES CONTEND]  
in Chinese No 3, 4 Jun 77 pp 38-39, 46

ABSTRACT: The Ch'ien-chin Type steam locomotives, designed and manufactured in China are among the major types currently in use to pull freight cars. Due to improper contact with the wheel, horizontal hairline fractures in the area of contact are often discovered after prolonged use of the locomotive. According to preliminary survey, fracture exists in more than 40 percent of the axes in service more than 5 years. In the past, regardless of the size of the fracture, a new axis was used to replace the old one as soon as the fracture was discovered. This paper describes the technique of calculating the threshold value  $\Delta K_{th}$  according to fracture dynamics. With this calculation, so long as the enlargement of the fracture before the next three hundred thousand km inspection time will not exceed a depth of 7 mm, the axis does not have to be instantly replaced. The concept of the threshold value and the reason that such axes do not directly threaten railway safety are explained.

AUTHOR: HUNG Te-yuan [3163 1795 0337]

ORG: Peking Institute of Botany, Chinese Academy of Sciences

TITLE: "Several Viewpoints Concerning the Basic Theory of Taxonomy"

SOURCE: Peking TZU-JAN K'O-HSUEH CHENG-MING [LET THE NATURAL SCIENCES CONTEND]  
in Chinese No 3, 4 Jun 77 pp 40-46

ABSTRACT: Quotations from MAO Tse-tung and Engels are used to refute the Gilmour and Walters utilitarian theory of taxonomy. The author maintains that taxonomy must not be simply to serve an external objective (i.e. for a practical purpose.) It must be a natural classification reflecting the inner relationship of things, and the basic regularity of this type of relationship is the basic theory of taxonomy, concerning which 3 problems are raised: (1) The model concept is the product of the divine creation of species theory and many new species have thus been unnecessarily created. (2) There is objectivity in concepts of taxon, category, etc. (3) The goal of systematic classification is attainable because in relative truth exists the absolute truth, which we may not know now but we are forever closer to it. Moreover, the opposite unity relationship of continuity and disruption applies to evolution. The author believes that a new era of taxonomy is at hand, based upon dialectical materialism, to unite such concepts as common distant origin and periodical separate modifications, continuity and discontinuity, and so forth.

AUTHOR: LI Chi-tsung [2621 4949 1350]  
YEN Shao-tsung [0917 4801 1350]

ORG: None

TITLE: "Several Viewpoints Concerning Nonstandard Analysis"

SOURCE: Peking TZU-JAN K'O-HSUEH CHENG-MING [LET THE NATURAL SCIENCES CONTEND]  
in Chinese No 3, 4 Jun 77 pp 47-55

ABSTRACT: Following the paper by CHANG Chin-wen [1728 6930 2429] and YUAN Meng [5913 5492], published in the previous issue of this journal, criticizing the nonstandard analysis of the United States mathematician, Abraham Robinson, the authors join the battle with this paper, in connection with the current program in China of learning Marx's Notes on Mathematics. The authors agree with Robinson with respect to the concept of 'point' in standard analysis and accept Robinson's 'nomads' as a more structured and stratified concept. The origin of a concrete structure depends upon physical practice, however, because according to materialism, mathematics is not simply a product of logic and Robinson's nonstandard analysis remains an expression of formalism and idealism. There is a chapter in the paper arguing against a metaphysical concept of 'nomad' and '0,' which is implied in Robinson's theory.



AUTHOR: SHU Chi [5289 1015]

ORG: Department of Mathematics, Hsi-peì University

TITLE: "On the Real Archetype of Mathematical Structure R in Nonstandard Analysis"

SOURCE: Peking TZU-JAN K'O-HSUEH CHENG-MING [LET THE NATURAL SCIENCES CONTEND]  
in Chinese No 3, 4 Jun 77 pp 56-58

ABSTRACT: The author maintains in the paper that What Abraham Robinson did was to give a mathematical and logical description of the mathematical structure R, which is called nonstandard analysis by foreign mathematicians. According to the author, this was in fact originally an idea of Marx and Engels, however. This paper is an attempt to clarify the mathematical structure R based on the teachings of Marx and Engels. Quoting Marx and Engels, the author emphasizes the following two viewpoints in Notes on Mathematics and Natural Dialectics: (1) Infinitesimals (infinity) are real numbers; (2) Point is divisible.

AUTHOR: CHOU Kuan-hsiung [0719 0385 7160]

ORG: Hua-chung Engineering College

TITLE: Nonstandard Analysis Should be Examined With the Two Theories of the Point"

SOURCE: Peking TZU-JAN K'O-HSUEH CHENG-MING [LET THE NATURAL SCIENCES CONTEND]  
in Chinese No 3, 4 Jun 77 pp 59-64, 55

ABSTRACT: The author's essential argument is the fact that Abraham Robinson divides point into the standard point and the nonstandard point, but does not provide a concrete answer to the question of how to divide the nonstandard point. According to the author, it is without doubt that the standard point of Robinson's theory remains indivisible; therefore, it cannot be said that Robinson has broken away from the traditional concept of the point. For example, in nonstandard analysis, the distance between  $a(5)$  and  $b(3)$  is 2 (i.e. the distance between two standard points) and it cannot be  $2 +$  (or minus) an infinitesimal.

AUTHOR: LI Ching-tung [2621 2417 2639]

ORG: Institute of Geology, Chinese Academy of Sciences

TITLE: "On the Place of 'Formation' and 'Reformation' in the Developmental Process of the Earth's Crust--A Critique of 'Several Points of Contention Concerning Geodynamics' and 'What is the Essence of Diversity'"

SOURCE: Peking TZU-JAN K'O-HSUEH CHENG-MING [LET THE NATURAL SCIENCES CONTEND] in Chinese No 3, 4 Jun 77 pp 65-72

ABSTRACT: Geodynamics, a subject created by the late Chinese geologist LI Szu-kuang [2621 0934 0342] has contributed to mineral and ground water prospecting, engineering, construction, and earthquake forecasting in China. In his textbook on the subject, he proposed 8 problems and hoped that his followers will resolve them for the development of this science. In the No 2, 76 issue of this journal, there was a paper by K'O Ch'un [2688 5028], titled 'Several Problems Concerning the Development of Geodynamic Theories,' and in the No 2, 77 issue of the journal, there were two papers by YEN Shih [0917 1395] and MAO Ch'ung-chieh [3029 1504 2638] criticizing K'O's paper from two different views. After reading all 3 papers, the author of this paper believes that both YEN and MAO twisted the meaning of K'O's paper. Although it is beneficial to debate, yet to misinterpret the words of an author is not a correct attitude for criticism according to Chairman Mao. The author proceeds to explain his understanding of the debated subjects.

AUTHOR: T'ANG Hsiao-wei [0781 1321 1218]  
FAN Ch'in-min [5400 2953 2404]

ORG: Both of Chinese Academy of Sciences

TITLE: "Investigations Into Quasi-Stellar Objects [QUASARS]"

SOURCE: Peking TZU-JAN K'O-HSUEH CHENG-MING [LET THE NATURAL SCIENCES CONTEND] in Chinese No 3, 4 Jun 77 pp 73-76

ABSTRACT: Quasars are astronomical discoveries of the 1960's, having very important significance in verifying the portion of dialectical materialism concerning the infinite nature of the universe and the multiplicity of forms of its materials. Since the rise of radioastronomy, more and more cosmic radio sources have been discovered. Before the 60's, due to insufficient precision positioning technique, corresponding optical bodies were not found. As positioning techniques improved, these star-like optical points, but very different from stars, were sighted. They were named 'quasi-stellar radio sources.' Later, other celestial bodies, emitting ultraviolet light, instead of radio, were again discovered. Today, these two types together are called quasars. The major properties of quasars, problems concerning the red shifts of quasars, and the assumption that quasars are a constituent part of the heavy particle stellar system are explained in the paper in separate chapters.

AUTHOR: None

ORG: None

TITLE: "Excerpt From 'The Road of Development of Quantum Mechanics Cannot be Sealed Up--John von Neumann's Completeness Theorem Criticized'"

SOURCE: Peking TZU-JAN K'O-HSUEH CHENG-MING [LET THE NATURAL SCIENCES CONTEND] in Chinese No 3, 4 Jun 77 pp 77-inside back cover

ABSTRACT: This paper is an excerpt of a paper of the title, originally published in PEKING SHIH-FAN TA-HSUEH HSUEH-PAO - TZU-JAN K'O-HSUEH PAN [BULLETIN OF PEKING NORMAL UNIVERSITY - NATURAL SCIENCES EDITION] No 2-3, 1976. In 1932, mathematician John von Neumann proposed the so-called completeness theorem, stating that quantum mechanics is complete in form (at that time,) and the wave function  $\psi$  is a complete description of the micro-cosmic state; the statistical interpretation of the micro-universe has reached the limit of knowledge and a further theoretical search or an attempt to use 'hidden variables' to explain the result of quantum mechanics is definitely futile. This theorem is also called the theorem of the non-existence of hidden variables. The mathematical process used by von Neumann to prove the completeness of quantum mechanics is first introduced. The author then points out that the error in von Neumann's conclusion is created directly by his mistaken premise. Papers published in foreign countries criticizing this theorem and opinions of the Copenhagen School defending this theorem are briefly introduced in the final portion of the paper.

6168

CSO: 4009

PHYSICS

AUTHOR: WANG Lung [3769 7893]

ORG: Institute of Physics, Chinese Academy of Sciences

TITLE: "Perform Research Persistently Concentrating on the Rehabilitation of the Basic Theory of Natural Sciences

SOURCE: Peking WU-LI [PHYSICS] in Chinese Vol 6, No 4, 18 Aug 77 pp 193-197

ABSTRACT: The "gang of four" and their supporters have wrongly pursued attacks on Chou P'ei-yuan [0719 1014 3293] for his following the instruction of Chairman Mao and Premier Chou to persistently emphasize the research of the basic theories of natural sciences. Now, the "gang of four" is gone. It is time for us to regroup and thoroughly carry out the important directions of Premier Chou. The first important question is the existence of basic theories in natural sciences. Next, we need to examine the relationship between these basic theories and the common viewpoint of the scientific field and the practical field. Theory is not necessarily disconnected with the practical field. The "gang of four" has committed the serious crime of suppressing theoretical works. This was extremely harmful to scientific endeavors.

AUTHOR: LU Shao-hsing [0712 4801 5281]  
HSU Tai-shun [1776 1129 7311]

ORG: Department of Optics, Shantung University, Nonlinear Optics Research Subgroup, Institute of Physics, Chinese Academy of Sciences

TITLE: "2650 Å Ultraviolet Laser Radiation Generated by Frequency Doubling"

SOURCE: Peking WU-LI [PHYSICS] in Chinese Vol 6, No 4, 18 Aug 77 pp 198-200

ABSTRACT: From April to July, 1975 Lu Shao-hsing and Hsu Tai-shun went to the Nonlinear Optics Research Subgroup, the Laser Research Group at the Institute of Physics of the Chinese Academy of Sciences for further advanced studies. The major research work was centered around the production of 2650 Å ultraviolet laser beam. This paper is a summary of their studies on this topic. It includes the experimental setup and discussion on the results. It was mentioned that this research should be continued to obtain better results.

AUTHOR: CHANG Chia-lu [1728 1367 7498]  
CH'I Shih-ling [7871 1102 6875]

ORG: Institute of Physics, Chinese Academy of Sciences

TITLE: "On the Precision Measurements of Frequency by Third Octave Band Pass Filters-A Method for Pitch Extraction"

SOURCE: Peking WU-LI [PHYSICS] in Chinese Vol 6, No 4, 18 Aug 77 pp 201-202 and 197

ABSTRACT: A method of "side-band difference" was proposed. It utilizes three filter outputs and their voltage differences to measure frequency accurately. It was found that this method is applicable to complicated periodic signals with excellent time resolution. When the voltage sensitivity is one decibel, the sensitivity of the frequency measurement is better than 0.4 percent; Testing data was also presented.

AUTHOR: None

ORG: Acoustics Laboratory, Tungchi University, Shanghai

TITLE: "Ultrasonic Measurements in Industry"

SOURCE: Peking WU-LI [PHYSICS] in Chinese Vol 6, No 4, 18 Aug 77 pp 203-205

ABSTRACT: Supersonic research in China has reached international level in its wide range of applications. But the in-depth search must be improved. Basic understandings of the technique of control, sonic speed, the speed and intensity reduction, and the speed resistance must be further improved. Applications and their development trends were discussed. It was pointed out that further studies on the electronic stability problems, acoustical techniques, frequency spectrum analysis, and phase relationships must be carried out. Furthermore, new techniques such as laser must be examined to see if they can be applied in conjunction with the ultrasonic techniques.

AUTHOR: None

ORG: Weak Signals Measurement Subgroup, Institute of Physics, Chinese Academy of Sciences, Lushan Electronics Instrument Plant, Kiangsi

TITLE: "Lock-in Amplifier-A Tool for Detecting Weak Signals"

SOURCE: Peking WU-LI [PHYSICS] in Chinese Vol 6, No 4, 18 Aug 77 pp 206-210

ABSTRACT: The general principle of the lock-in amplifier operation was covered. Detailed examination of noise and amplifier characteristics, signal-to-noise ratio improvement, noise range, and preamplifier noise coefficient were carried out. Description of the FS-1 model lock-in amplifier with a block diagram about its basic operating principle was presented. It was stated that this amplifier will have superior performance provided proper shielding and other preparations on the estimation of noise are made.

AUTHOR: CHAO Chung-hsien [6392 1813 6341]

ORG: Institute of Physics, Chinese Academy of Sciences

TITLE: "Searching for Superconductors with High Critical Temperature"

SOURCE: Peking WU-LI [PHYSICS] in Chinese Vol 6, No 4, 18 Aug 77 pp 211-216

ABSTRACT: Critical temperature of superconductors can be and must be raised so that their range of application can be broadened. It was estimated that, in 3 to 5 years, superconductor electric generators might be used in nuclear submarines and/or other applications where the requirements of small volume and light weight are critical. The BCS theory was recapitulated. Possible methods of achieving higher critical temperature were proposed and discussed.

AUTHOR: None

ORG: Activation Analysis Group, Shanghai Nuclear Institute

TITLE: "Proton Excited X-ray Analyses"

SOURCE: Peking WU-LI [PHYSICS] in Chinese Vol 6, No 4, 18 Aug 77 pp 216-223

ABSTRACT: A new physical method of isotope analysis, the proton excited x-ray analysis, was introduced. It was found to be applicable to many fields such as environmental protection, biology, medicine, agriculture, and solid-state physics. Subjects covered are the basic physical principle, the analytical method, and practical examples of applications. A comparative study of the proton microscope and the electron probe shows that the former method is superior for sample analysis.

AUTHOR: HSUEH P'i-yu [5641 0012 0645]

ORG: Institute of Atomic Energy, Chinese Academy of Sciences

TITLE: "Blocking Effect and It's Applications"

SOURCE: Peking WU-LI [PHYSICS] in Chinese Vol 6, No 4, 18 Aug 77 pp 223-228

ABSTRACT: The blocking effect phenomenon was described. A series of calculation formulas was summarized. The basic principle of application of the blocking effect in the study of the short-lived nuclear process was discussed. Its application in the study of the crystal structure and ion injection technique was described.

AUTHOR: LI Huan-t'ieh [2621 3562 6993]

ORG: Institute of High Energy Physics, Chinese Academy of Sciences

TITLE: "Solid-state Nuclear-track Detectors"

SOURCE: Peking WU-LI [PHYSICS] in Chinese Vol 6, No 4, 18 Aug 77 pp 229-235 and 205

ABSTRACT: Three methods of developing solid-state nuclear-track and their observation in insulating materials were stated. A detailed introduction of the chemical etching process was described. Items included are the track formation, chemical etching process and track parameters, detector characteristics, particle identification, and track measurement and counting.

AUTHOR: CHIANG Yu-lu [1203 0645 7120]

ORG: Chinese Academy of Quantitative Measurement Sciences

TITLE: "International System of Units (SI)"

SOURCE: Peking WU-LI [PHYSICS] in Chinese Vol 6, No 4, 18 Aug 77 pp 236-242

ABSTRACT: The historic development of the international system of units, its present status, various variations of this system, the basic operation principle, and other derived units were described. It was concluded that it is easy for China to adopt the international system of units from the old metric system.



AUTHOR: SHEN Chu-t'ung [3088 0031 0681]

ORG: Institute of Physics, Chinese Academy of Sciences

TITLE: "Investigation into the Growth Mechanism of Synthetic Diamonds"

SOURCE: Peking WU-LI [PHYSICS] in Chinese Vol 6, No 4, 18 Aug 77  
pp 243-250

ABSTRACT: Three methods of producing synthetic diamonds were discussed. They are the direct transformation, the catalytic-melting, and the expansion methods. Various working formulas were recorded. An illustrative photo showing the synthetic diamond production chamber and the control console at the East District Synthetic Diamond Works, Peking was shown on the front cover.

Valuable comments were given by T'ANG Ao-ch'ing [0781 2407 1987].  
This paper was received on 20 Dec 1972.

AUTHOR: LI Chih-hua [2621 2784 5478]  
CHANG Kuang-yun [1728 1684 0061]

ORG: Institute of Grinding Materials, Tools, and Dust, First Ministry of Machine Building

TITLE: "Some Questions Concerning the Growth of Synthetic Diamonds"

SOURCE: Peking WU-LI [PHYSICS] in Chinese Vol 6, No 4, 18 Aug 77  
pp 251-256 and 242

ABSTRACT: Diamond is the hardest material. It has important industrial applications and, thus, a direct bearing on economic development. Naturally existing diamonds are limited and difficult to extract from the mines. Lately, synthetic diamonds have been produced in an environment of extremely high pressure and temperature. In this process, the choice of catalyst for melting the material components is a critical one. Carbon compounds must be chosen carefully. Pressure transmission medium is also an important factor. Other problems discussed are the filling methods and proper choices of the values and applications of high pressure and temperature.

RADIO

AUTHOR: LIN Chao-yuan [3249 5128 0337]

ORG: T'ientsin City Middle School No 42

TITLE: "Voltage Conversion In a Mixed Usage of Transistors and Integrated Circuits"

SOURCE: Peking WU-HSIEN-TIEN [RADIO] in Chinese No 7, Jul 77 pp 2-4

ABSTRACT: In many digital instruments and automatic control equipment, both transistors and integrated circuits are used in conjunction to satisfy the requirements of power output and miniaturization. In this article, the problem of adjusting the input and output voltages among these components are discussed. The specific problems discussed are: 1) feeding the output from a TTL integrated circuit into a transistor circuit; 2) feeding the output from a transistor circuit to a TTL integrated circuit; 3) feeding the output from a TTL integrated circuit into a MOS integrated circuit into a TTL integrated circuit.

AUTHOR: TI I [0966 0308]

ORG: None

TITLE: "Cold End Compensation Circuit for a Thermocouple"

SOURCE: Peking WU-HSIEN-TIEN [RADIO] in Chinese No 7, Jul 77 p 4

ABSTRACT: The temperature difference between the hot and cold ends of a thermocouple generates an electric potential which is proportional to the temperature difference. In order to use the thermocouple as a thermometer, the temperature variations of the cold end due to fluctuations in ambient temperature must be compensated for. This article introduces a compensation circuit in which appropriately chosen resistors are used to nullify the effects of temperature variations. The compensation error of this circuit is less than 1 degrees C within a temperature range between 0 degrees and 45 degrees C.

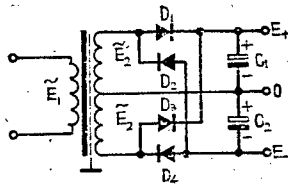
AUTHOR: HUANG Li-jen [7806 4539 0086]

ORG: None

TITLE: "Coupled Rectifier Voltage Supply"

SOURCE: Peking WU-HSIEN-TIEN [RADIO] in Chinese No 7, Jul 77 p 6

ABSTRACT: This article introduces a rectifier circuit which is designed to provide two d c output voltages of equal magnitude and opposite polarity. The circuit requires only four rectifier diodes which are connected in a coupled manner as shown in the diagram. It also has two condensers which perform the functions of filtering the voltages. The procedures of selecting the diodes, the condensers, and calculating the effective secondary voltages and currents are illustrated by a numerical example.



AUTHORS: WU Jung-ch'uan [0702 2837 2938]  
WANG Shu-hao [3769 2562 3185]

ORG: None

TITLE: "Application of Constant-current Diodes in a Stable Voltage Source"

SOURCE: Peking WU-HSIEN-TIEN [RADIO] in Chinese No 7, Jul 77 p 7

ABSTRACT: Constant-current diode is a new semi-conductor device which has a flat current-voltage characteristic curve over a wide range of voltage values. In this article, the constant-current diodes produced by the Hangzhou University are introduced. The current ratings of these diodes range from 300 micro-amps to 8 milli-amps. Examples of using the constant-current diodes in stable-voltage circuits are also presented. Specifically, these examples include: 1) using a 500 micro-amp diode in a tunable d c stable-voltage circuit; 2) using a 1 milli-amp diode as the collector load of a single-transistor amplifier; 3) using three constant-current diodes as the collector load of an amplifier to achieve high gain in a high voltage supply circuit.

AUTHOR: None

ORG: None

TITLE: "News in Electronics"

SOURCE: Peking WU-HSIEN-TIEN [RADIO] in Chinese No 7, Jul 77 p 8

ABSTRACT: Four new products are introduced: 1) the JD-1 electric motor test equipment developed by the Shih-chia-chuan Radio No 4 Factory; 2) the JGR-J automatic laser powered, resistance carving machine developed jointly by the Hangchou Radio Technical School and the Shanghai Radio No 1 Factory; 3) a controllable silicon power supply unit without circulating current for gate type crane lift developed by the An-shan City Radio No 5 Factory; 4) the JSCK-10 simple process control device developed by the Shanghai Light Industrial College Electric Training Class.

AUTHOR: LIN Yung-en [2651 3057 1869]

ORG: None

TITLE: "Trouble Shooting the Mixed Type Scanning Circuit of a 9-inch Television Receiver" (Part 2)

SOURCE: Peking WU-HSIEN-TIEN [RADIO] in Chinese No 7, Jul 77 pp 9-10 & 14

ABSTRACT: The trouble shooting procedures for the commonly encountered malfunctions of the mixed type scanning circuit of a 9 inch television receiver are introduced. These malfunctions include: 1) poor horizontal or vertical alignment of the screen; 2) the appearance of folding on the right side or on the lower side of the screen; 3) the appearance of vertical white lines or white dot region on the left side of the screen; 4) the appearance of horizontal black band on the screen; 5) vertical distortion; 6) the appearance of bright scan lines; 7) non-synchronization of both horizontal and vertical scans; 8) the appearance of black lines when the horizontal scan is non-synchronized; 9) non-synchronization of only the vertical scan; and 10) non-synchronization of a certain portion of the picture.

AUTHOR: WANG Te-yuan [3769 1795 3283]

ORG: None

TITLE: "Assembly and Tuning of Black and White Television Receivers -- Audio Channel Section"

SOURCE: Peking WU-HSIEN-TIEN [RADIO] in Chinese No 7, Jul 77 pp 11-13

ABSTRACT: In tutorial form, this article describes the electric circuit of the audio section of a black and white television. The circuit diagrams are presented and the three components of the audio circuit, i.e., the intermediate frequency amplifier, the frequency discriminator and the low frequency amplifier are discussed individually. In particular, the distinction between a symmetrical proportional discriminator and an asymmetrical proportional discriminator is explained. In addition, the assembly procedure of the audio channel section is illustrated with the aid of printed circuit diagrams.

AUTHOR: YEH Hsin [5509 2500]

ORG: Yu-yao County People's Broadcasting Station

TITLE: "A Transistor Amplifier for Television Antenna"

SOURCE: Peking WU-HSIEN-TIEN [RADIO] in Chinese No 7, Jul 77 pp 13-14

ABSTRACT: In order to improve television reception in fringe areas without the use of high gain directional antennas, a signal amplifier has been developed. The amplifier enhances the signal level by performing low-noise wide-band amplification on weak signals before sending them to the television receiver. In this article, the basic principle of the amplifier is explained. The assembly procedure with special emphasis on high frequency screening measures and the tuning procedure for optimizing both video and audio reception are described.

AUTHOR: SUNG Shan [2646 1472]

ORG: None

TITLE: "The Use of Tri-color Film to Improve the Picture of a Black and White Television

SOURCE: Peking WU-HSIEN-TIEN [RADIO] in Chinese No 7, Jul 77 p 14

ABSTRACT: In this article, the author introduces a method of improving the picture of a black and white television set by covering the television screen with a tri-color transparent film. The recommended three colors are sky blue, yellow, and green, arranged vertically. The process of preparing the colored film is described in detail. To achieve best effects for blue-shaded picture tubes, the use of other color combinations in the film is also suggested.

AUTHOR: None

ORG: Shanghai Recording Equipment Factory

TITLE: "The 'Shanghai' Model LY-321 Transistor Magnetic Tape Recorder and Its Repair"

SOURCE: Peking WU-HSIEN-TIEN [RADIO] in Chinese No 7, Jul 77 pp 15-18

ABSTRACT: The 'Shanghai' LY-321 magnetic tape recorder is an all-transistor unit which can be operated with either a 220-volt a c or a 15-vol d c power source. The important technical specifications of the recorder are as follows: rated output power: 250 milliwatts with a load of 8 ohms; harmonic distortion: 3 percent at 1 kHz; signal to noise ratio: greater than 40 dB; frequency response: 80-8000 Hz  $\pm$  3dB at a tape speed of 9.53 cm per sec, and 100-4000 Hz  $\pm$  4dB at a tape speed of 4.75 cm per sec; power consumption: less than 4.5 watts. The mechanical system is driven by a d c motor whose rotational speed is controlled by a speed stabilizing circuit. In this article, the special features of the recording circuit, the playback circuit, the ultrasonic oscillator circuit, and the voltage indicator circuit of the recorder are described. (article to be continued)

AUTHOR: FANG Hsi [2455 6932]

ORG: None

TITLE: "How to Protect the High Power Transistors of an Amplifier"

SOURCE: Peking WU-HSIEN-TIEN [RADIO] in Chinese No 7, Jul 77 p 18

ABSTRACT: It has been found that failure of high power transistors such as 3AD30 and 3AD18 is a major cause of malfunctions in Chinese-made amplifiers. To prevent the high power transistors from being damaged, the following precautional measures should be taken: 1) ensure that the source voltage is below the maximum rated voltage; 2) ensure that the amplifier is connected to a properly matched load; 3) install the antenna properly in a fixed location; 4) keep the volume control at a low setting, avoid sudden increases in volume; 5) ensure that the speaker wires are securely fastened; 6) ensure that only good quality speakers are used; and 7) ensure that the causes of a blown fuse are discovered before operation of the amplifier is resumed.

AUTHOR: NONE

ORG: Peking Ts'ao-yang District Radio Repair Department

TITLE: "A C-D C Radio and Its Repair"

SOURCE: Peking WU-HSIEN-TIEN [RADIO] in Chinese No 7, Jul 77 pp 19-20

ABSTRACT: A C-D C radio is an older style radio that does not require a power transformer. Its electronic tube filaments are connected in series and its chassis is electrically charged. The main disadvantages of this type of radio are: 1) very low efficiency; 2) filaments easily damaged; 3) reduced component reliability due to overheating; and 4) high level of hum noise. As a result, the a c-d c radio is no longer in production. However, due to the large number of such radios currently being used, this article outlines the main features and maintenance procedures as a reference for do-it-yourself repair or modification.

AUTHOR: None

ORG: Shanghai Radio Factory No 2

TITLE: "The Design of Transistor Low Frequency Pre-Amplifier Circuits"

SOURCE: Peking WU-HSIEN-TIEN [RADIO] in Chinese No 7, Jul 77 pp 21-22

ABSTRACT: The function of a low frequency pre-amplifier is to enhance the weak audio signal from the detector to a sufficiently high level to excite the power amplifier. The basic requirements of a low frequency pre-amplifier are as follows: 1) it must have sufficiently high gain, or amplification factor; 2) its nonlinear distortion and frequency response must meet overall specifications; 3) its inherent noise level must be sufficiently low; 4) it must have sufficiently wide dynamic range; 5) it must have sufficient stability to guard against temperature or voltage fluctuations. In this article, the design procedure of a common-emitter, single transistor R-C coupled amplifier is described in detail (article to be continued).

AUTHORS: LIU Yuan-chin [0491 0338 6651]  
LI Chin-ch'un [2621 6930 2504]

ORG: None

TITLE: "Important Characteristics of Commonly Used Domestic Low Frequency Transistor Triodes"

SOURCE: Peking WU-HSIEN-TIEN [RADIO] in Chinese No 7, Jul 77 pp 23 and 32

ABSTRACT: The importance parameters of commonly used domestic triodes are compiled and tabulated. These triodes are designed for low frequency, medium or low power operation. The tabulated parameters include: 1) the collector-base reverse cut-off current; 2) the collector-emitter reverse cut-off current; 3) the common-emitter static current amplification factor; 4) the common-base and common-emitter current amplification factors under output short-circuit conditions; 5) the common-base and common-emitter cut-off frequencies; 6) the noise coefficient; 7) the collector-emitter reverse breakdown voltages; 8) the maximum collector current; and 9) the maximum allowable power dissipation at the collector. The test conditions for several typical transistor triodes are presented for reference.



AUTHOR: CH'EN T'ung [7115 1749]

ORG: None

TITLE: "Electronic Metronome"

SOURCE: Peking WU-HSIEN-TIEN [RADIO] in Chinese No 7, Jul 77 pp 24 and 26

ABSTRACT: An electronic metronome is introduced which can generate a continuous range of rhythms between 20 beats per minute and 240 beats per minute with a synchronous light and sound indicator. The basic circuit diagram which consists of a multi-frequency oscillator, a pulse amplification circuit, and a voltage stabilizing circuit is presented. The problem of selecting the circuit components is discussed and the assembling and tuning procedures are outlined.

AUTHOR: CHOU Ya-t'ien [0719 7161 3944]

ORG: None

TITLE: "A Coil Tester"

SOURCE: Peking WU-HSIEN-TIEN [RADIO] in Chinese No 7, Jul 77 pp 25-26

ABSTRACT: This article introduces a simple test instrument designed to detect open circuits, short circuits, or partial short circuits in an electric coil. The circuit diagram and basic principle of the test device are explained and the selection of components and assembly procedures are described. The tuning procedure and test operation of the instrument are also illustrated.

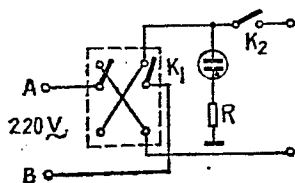
AUTHOR: LI Chung-shan [2621 1813 0810]

ORG: None

TITLE: "A Phase Line Indicator"

SOURCE: Peking WU-HSIEN-TIEN [RADIO] in Chinese No 7, Jul 77 p 26

ABSTRACT: A phase line indicator is designed to identify the phase output of a single-phase power supply or a single-phase electronic instrument. The indicator consists of a double-pole double-throw switch and a neon light grounded through a resistor, as shown in the diagram. The phase line of the power source is identified by the position of the switch when the neon light is on.



AUTHOR: WANG Yung-chiang [3769 3057 3068]

ORG: None

TITLE: "A Simple Method of Measuring the Reverse Breakdown Voltage of Transistors"

SOURCE: Peking WU-HSIEN-TIEN [RADIO] in Chinese No 7, Jul 77 pp 27-28 and 31

ABSTRACT: The reverse breakdown voltage of a transistor is the voltage level applied to the transistor at which the reverse current begins to increase drastically. This article introduces a simple method of measuring the reverse breakdown voltage of a transistor by connecting it to a high-sensitivity multimeter and a current-limiting resistor. Methods of measuring the reverse breakdown voltages of a transistor triode are also discussed. The procedures are illustrated by examples of measuring the reverse breakdown voltage of the diode 2AP5, the collector-emitter voltage of the triode 3AD30C, and the collector-base voltage of the triode 3DG403.

AUTHOR: CH'ENG Hung-chi [4453 1347 1015]

ORG: None

TITLE: "The Selection of Commonly Used Transistors in a Radio"

SOURCE: Peking WU-HSIEN-TIEN [RADIO] in Chinese No 7, Jul 77 pp 29-30

ABSTRACT: The quality of transistors in a radio directly affects the overall gain, the output power, the noise level, and the stability of the radio. In this article, the author discusses the general guidelines for selecting transistors for the frequency conversion stage, the low-frequency amplification stage, the intermediate frequency amplification stage, and for selecting the output power push-pull transistor and the detector diode. For convenience, the model numbers of the appropriate transistors for different applications are tabulated.

AUTHOR: None

ORG: None

TITLE: "Questions and Answers"

SOURCE: Peking WU-HSIEN-TIEN [RADIO] in Chinese No 7, Jul 77 p 31

ABSTRACT: In the form of replies to readers' questions, the following topics are discussed by the editorial staff: 1) the replacement of a 270  $\mu\text{f}$  condenser by a 340  $\mu\text{f}$  condenser in a radio; 2) the reception of broadcast signals via a soldering iron when it is in contact with the high-frequency transistor prior to the tuning of bias current; 3) the appearance of interference lines on the picture tube of a transistor television due to malfunctions in the power supply circuit; 4) the structure of the 3DA5A silicon high power transistor which has three leads two of which are emitters and the other is the base; 5) the structure of the 3DG57 low power transistor which has a square-shaped plastic enclosure.

AUTHORS: SHEN Hao [3088 3185]  
HUANG Tzu-chien [7806 1311 0256]

ORG: None

TITLE: Peking WU-HSIEN-TIEN [RADIO] in Chinese No 7, Jul 77 p 32

ABSTRACT: Two innovative ideas are introduced for improving the operation of soldering irons. They are: 1) drilling a small hole in the tip of the soldering iron to retain heated solder and to produce a better joint; 2) wrapping a piece of sheet-metal around the iron tip for stripping plastic insulation from electric wires.

AUTHOR: None

ORG: None

TITLE: "Illustrations for Front and Back Covers"

SOURCE: Peking WU-HSIEN-TIEN [RADIO] in Chinese No 7, Jul 77 front and back covers

ABSTRACT: The Ch'i-tung County Electronic Research Institute developed the first photo-electric process control system for operating locks in canals. The system has been implemented at the Lu-szu lock of Chiangsu Province and its operating reliability has proven to be 100 percent. The front cover is a pictorial illustration of this system in operation. The back cover shows a picture of the controllable-silicon power supply unit for gate-type crane lift. The unit was developed by the An-shan City Radio Factory No 5.

AUTHOR: None

ORG: None

TITLE: "Preliminary Results in the Application of Electronic Technology at the Chien-min Commune"

SOURCE: Peking WU-HSIEN-TIEN [RADIO] in Chinese No 8, Aug 77 p 2

ABSTRACT: Under the leadership of the Tsun-hua County, the Hsi-pu brigade of Chien-min Commune was selected as a prototype community to apply electronic technology in agricultural production and scientific experiments. During the first year, encouraging results have been reported, which include: 1) the use of table model electronic calculators to replace manual operations in accounting procedures; 2) the use of moisture and temperature measuring devices to monitor the conditions of food in storage; 3) the use of electric galvanizers and heart monitoring instruments to aid the medical practices of barefoot doctors; and 4) the use of high frequency seed treatment and machines in germination experiments, and the use of soil analyzers, light and temperature integrators to monitor the growth behavior of crops.

AUTHOR: None

ORG: Chin-chou District Agricultural Electronic Instrument Factory

TITLE: "The Model TC-A Soil Analyzer"

SOURCE: Peking WU-HSIEN-TIEN [RADIO] in Chinese No 8, Aug 77 pp 3-4

ABSTRACT: The TC-A soil analyzer has been developed to measure the nitrogen, phosphorus, and potassium contents as well as the salt content and temperature conditions of soil and water. The instrument has four sections: the voltage stabilization section, the nutrient measuring section which consists of a differential of an RC oscillation circuit, and the temperature measuring section which consists of a bridge circuit with heat-sensitive resistors. This article presents the instructions for operating the instrument and briefly trouble-shooting procedures.

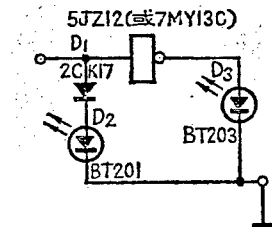
AUTHOR: LI Yu-chieh [2621 6657 2638]

ORG: None

TITLE: "Voltage Test Pen for Integrated Circuit"

SOURCE: Peking WU-HSIEN-TIEN [RADIO] in Chinese No 8, Aug 77 p 4

ABSTRACT: A voltage test pen has been developed to detect either the high voltage output (2.7-4.2 volts) or low voltage output (less than 0.8 volt) of an integrated circuit. The test pen circuit consists of a TTL single NAND gate 5JZ12, two gallium phosphorous-arsenide luminescent diodes BT 201 and BT 203, and a 2CK series diode, as shown in the diagram. The voltage levels of the integrated circuit are indicated by the lumination of either the BT 201 or the BT 203 diode. The components of the test pen are products of the Soochow semiconductor factory.



AUTHOR: SHIH Shao-ch'iu [2457 4801 5941]

ORG: Ch'ang-shu Semiconductor Factory

TITLE: "Liquid Crystal Display and Its Application"

SOURCE: Peking WU-HSIEN-TIEN [RADIO] in Chinese No 8, Aug 77 pp 5-7

ABSTRACT: Liquid crystal is an organic material which has an ordered molecular structure and the characteristics of a liquid. Under an electric field, it exhibits various electro-optical phenomena such as dynamic scattering, distortion effect, and storage effect. This article uses the dynamic scattering effect as an example to illustrate the basic principles of liquid crystals. The advantages of using liquid crystals in electronic devices such as calculators, watches, and displays are pointed out; they are: 1) low operating voltage, 2) low power consumption, 3) small size, and 4) flexibility in the size of display. Two specific applications of liquid crystals are described in detail: the liquid crystal digital display screen, and the liquid crystal large screen display.

AUTHOR: SUNG Tung-sheng [1345 2639 3932]

ORG: None

TITLE: "Introduction to Linear Components"

SOURCE: Peking WU-HSIEN-TIEN [RADIO] in Chinese No 8, Aug 77 pp 8-9 & 7

ABSTRACT: Linear components are linear integrated circuits which constitute the basic elements of such devices as d c computation amplifiers, wide-band amplifiers, audio frequency amplifiers, sine-wave oscillators, and integrated voltage stabilizing sources, etc. In this article, the basic differences between linear integrated circuits and separate component circuits are pointed out. The general structure and operating principle of linear components are illustrated by two typical domestic products: the d c computation amplifier BG305 and the wide-band amplifier 5G722. In particular, the individual stages of the BG305 which consist of the input differential amplifier, the emitter follower and PNP amplifier, the composite common-emitter amplifier, and the complementary push-pull power amplifier are described in detail.

AUTHOR: T'ANG Chung-li [0781 1350 3810]

ORG: None

TITLE: "A Simple A C-D C Transistor High Frequency Head"

SOURCE: Peking WU-HSIEN-TIEN [RADIO] in Chinese No 8, Aug 77 pp 10-11

ABSTRACT: This article introduces an a c-d c transistor high frequency head which can be operated with either a 6.3 volt a c power supply or a 9-11 volt d c power supply. Its electric circuit consists of four major components: the high frequency amplifier, the local oscillator, the frequency mixer, and the power supply. It has four transistors all of which are silicon triodes. The detailed circuit diagram, the selection of components and the assembly procedure are described in detail. Suggests for constructing and tuning the unit are also presented.

AUTHOR: None

ORG: Tantung Television Parts Factory, Shanghai Radio Factory No 9,  
and Shanghai Hsinchi Radio Factory

TITLE: "The Unified Design of a Transistor Fine-tuning Channel Selector"

SOURCE: Peking WU-HSIEN-TIEN [RADIO] in Chinese No 8, Aug 77 pp 12-15

ABSTRACT: The transistor independent fine-tuning channel selector is a product of the unified design approach for domestic black and white televisions. It is a pre-assembled unit which can be connected to the IF channels of a variety of transistor and electron tube television receivers. In this article, the special features of its structure designed to improve reliability and to facilitate production and maintenance are introduced. The design requirements of its electric circuit and the circuit components which include the high frequency amplifier, the local oscillator, the frequency mixer, the input circuit, and the high-pass filter are described. The major technical specifications of the channel selector are also presented. In addition, the procedures for tuning the operating curve of the selector are summarized (to be continued).

AUTHOR: None

ORG: Shanghai Radio Factory No 2

TITLE: "The Design of Transistor Low Frequency Pre-amplifier Circuits" (Part 2)

SOURCE: Peking WU-HSIEN-TIEN [RADIO] in Chinese No 8, Aug 77 pp 16-19

ABSTRACT: This is the conclusion of a two-part article on the design of transistor low frequency pre-amplifier circuits. Detailed design procedures are discussed for three types of amplifiers: an R-C coupled amplifier circuit, a direct coupled feed-back amplifier circuit, and a transformer coupled amplifier circuit. Specifically, the design procedure for the R-C coupled amplifier, determining the load impedance and static operating point, the emitter resistance and bias resistances, the coupling capacity and emitter branch circuit capacity. The design procedure for the transformer coupled amplifier circuit consists of determining the static operating current, the collector peak current, the collector peak voltage, the a c load impedance and computing the power gain and transformer parameters. Both procedures are illustrated by numerical examples.



AUTHOR: LI Chin-ch'un [2621 6930 2504]

ORG: None

TITLE: "Important Characteristics of Commonly Used Domestic Low Frequency Transistor Triodes" (Part 2)

SOURCE: Peking WU-HSIEN-TIEN [RADIO] in Chinese No 8, Aug 77 pp 19-20

ABSTRACT: This is the continuation of a series article which presents the important parameters of commonly used domestic transistor triodes (see the July 1977 issue of this journal). In this issue, technical data on the 3BX series germanium NPN type triodes, the 3DX series silicon NPN type triodes, and the 3CX series silicon PNP type triodes are tabulated on the inside back cover. An additional parameter included in this table is the characteristic frequency  $f_T$  which is the frequency when the emitter current amplification factor reduces to unity. The test conditions for several typical triodes at a temperature of 25 degrees C are also tabulated.

AUTHOR: HUANG Hsu-ch'ung [7806 2485 5115]

ORG: Shanghai Radio Factory No 11

TITLE: "Electromotive Rubber Rim Speaker"

SOURCE: Peking WU-HSIEN-TIEN [RADIO] in Chinese No 8, Aug 77 pp 20-21

ABSTRACT: The main disadvantages of conventional electromotive paper cup speakers are the presence of peaks and valleys in the frequency response curve, and the relatively high resonant frequency ( $\sim 55$  Hz), which results in poor frequency response characteristics at low frequencies. In order to improve speaker performance, the Shanghai Radio Factory No 11 developed a rubber rim speaker, the "Fei-lo" model YD10-3006, which has a relatively flat frequency response curve and a harmonic distortion of less than 5 percent. The relatively low resonant frequency of the speaker (between 15 and 25 Hz) also results in much improved low frequency performance. However, due to the increased mass, the efficiency of the speaker is reduced; as a result it must be driven by a high power amplifier.

AUTHOR: None

ORG: Shanghai Recording Equipment Factory

TITLE: "The 'Shanghai' Ly-321 Transistor Magnetic Tape Recorder and Its Repair" (Part 2)

SOURCE: Peking WU-HSIEN-TIEN [RADIO] in Chinese No 8, Aug 77 pp 22-24

ABSTRACT: This is the conclusion of a two-part article on the 'Shanghai' Ly-321 magnetic tape recorder. Specifically, it describes the power/supply circuit and the speed stabilization circuit of the recorder. The commonly encountered malfunctions of the tape recorder and their repair procedures are also discussed. They are: 1) repeatedly blown fuse; 2) overheating of the transistors BG<sub>17</sub> and BG<sub>18</sub> after one to two minutes of operation; 3) failure in the ultrasonic oscillator; 4) failure in the 4.75 cm/sec playback mechanism; 5) failure in both the 9.53 and 4.75 cm/sec playback mechanisms; and 6) playback speeds too fast and failure in the speed-control switch. In addition, the technical data on the recording high frequency promoting coil, the wave trap coil, the ultrasonic oscillator coil, the playback high frequency promoting coil, and the frequency discrimination induction coil are also presented.

AUTHOR: LIN Yung-en [2651 3057 1869]

ORG: None

TITLE: "Application of D C Converter -- Battery Powered Fluorescent Lamp"

SOURCE: Peking WU-HSIEN-TIEN [RADIO] in Chinese No 8, Aug 77 pp 25-27

ABSTRACT: This article introduces a method of converting a 9-volt d c power supply into a 220-volt a c power supply to operate fluorescent lamps. Specifically, two circuits are introduced: one is a single-transistor conversion circuit for low power lamps (~8 watts); the other is a push-pull two-transistor conversion circuit for higher power lamps (~20 watts). The selection of components and construction procedures for the circuits are described. Modifications of the circuits to allow both d c and a c operations of the fluorescent lamp are also introduced.

AUTHOR: None

ORG: None

TITLE: "Illustrations for Front and Back Covers"

SOURCE: Peking WU-HSIEN-TIEN [RADIO] in Chinese No 8, Aug 77 front and back covers

ABSTRACT: The front cover shows a picture of an old accounting clerk of the Chien-min Commune of Tsun-hua County, Hopei Province using a modern electronic calculator to perform his computations. Other electronic devices such as transistor moisture measuring instrument, low frequency galvanizer, high frequency seed treatment machine, light integrator, and black lamp are also used by members of the Chien-min Commune, as illustrated by pictures on the inside front cover. The back cover shows a picture of members of the agricultural experiment station of Hsi-pu brigade using an infrared thermometer to measure the surface temperature of wheat crops.

3012

CSO: 4009

AUTHOR: None

ORG: The PEOPLE'S DAILY

TITLE: "How Could Modernization of Postal and Telecommunication Services Be Quickly Carried Out As Seen From Yen-shou"

SOURCE: Peking WU-HSIEN-TIEN [RADIO] in Chinese No 9, Sep 77 pp 2-3

ABSTRACT: This is an abridged article in the PEOPLE'S DAILY, 7 Aug 77, written by its correspondent and staff reporter, reporting their "Visit to Yen-shou County Postal-Telecommunication Office in Heilungkiang Province." This small post office has 17 branch offices and a total number of less than 200 staff members and workers. In a few years, they have achieved automation of an old telephone system, modernized telecommunication between the city and rural communes and motorized the delivery of mails, through their own efforts. This article gives credit for this success mainly to a technician SunCh'un-yu [1327 4783 3768], communist and labor model. Sun is the graduate of a primary school and received only 2 years of technical training. Since 1969, with the assistance and encouragement of the office party branch secretary, Sun has made selfless efforts in training some 10 technicians, building a 600-channel automatic telephone exchange, building a 4-channel

[continuation of WU-HSIEN-TIEN No 9, Sep 77 pp 2-3]

carrier wave telephone and installing an automatic parcel delivery machine. Pictures on inside of cover page show: (1) Sun Ch'un-yu (center) checking connection shelf of a 600-channel half-electronic automatic telephone exchange built by himself; (2) Yen-shou County Postal-Telecommunication Office's self-made 600-channel half-electronic automatic telephone exchange, already in operation; (3) Yen-shou County Chia-hsin Commune Postal-Telecommunication Branch Office has installed a 3-channel carrier wave telephone set; (4) Yen-shou County Postal-Telecommunication Office uses self-made plug-less long-distance telephone exchange; and (5) Resolutely runs well the "July 21" Workers' University, trains a red-and-expert technical core force.

AUTHOR: WU Shao-chin [0702 4801 6855]

ORG: None

TITLE: "A Portable Remote-Control Wind Direction Speed Meter"

SOURCE: Peking WU-HSIEN-TIEN [RADIO] in Chinese No 9, Sep 77 pp 4-5

ABSTRACT: The author explains that at present wind speedometers in common use mostly record measurements of speed by means of mechanical transmission which increases the friction factor of the rotation of wind-cups, thus lowering the sensitivity of the instruments. He presents a circuit diagram of a portable remote-control wind direction speed meter, which consists of circuits of the regulated power supply, the switch unit, the time reporting unit, the average display unit and the instant display unit. A thin 4-tooth aluminum disc is fixed at the lower end of the wind-cup rotating axle. The teeth rotate between the two induction coils of the oscillation circuit of the switch unit which produces four positive pulses at each rotation of the wind cups. From the number of pulses within a given time, the speed of wind can be calculated. The time reporting circuit is composed of a single-crystal time-delaying circuit and an audio-frequency oscillation circuit, which produces sound in a loudspeaker every 2 minutes. At the same time, the volt-meter indicates the average wind speed. When the instant display circuit is switched on, the meter indicates the instant wind speed. A schematic diagram shows the structure of the wind-direction induction machine which is the wind vane. Wind direction is indicated by eight electric bulbs.

AUTHOR: WANG Chao-ch'uan [3769 0340 0356]

ORG: None

TITLE: "Some Types of Counters Composed of D Activators"

SOURCE: Peking WU-HSIEN-TIEN [RADIO] in Chinese No 9, Sep 77 pp 6-5

ABSTRACT: The author explains that the D activator (such as Model SC3102) uses the positive jump of clock pulses for activation and also has the function of maintaining blocking, which may be conveniently employed as the component of binary and decimal counters. He presents two diagrams showing the wave-forms of two binary counters, one of adding type and other of subtracting type, with four activators in series for four digits of each counter. Then, he presents another two diagrams showing the wave-forms of two 4-digital decimal counters of adding and subtracting types, also with four activators connected in series. The difference between the four types lies in the different connections between the input and output terminals of the four activators. Each diagram is accompanied with a table showing different stages of the four activators of each counter in operation.

AUTHOR: YEN Ch'ao [7346 6389]

ORG: None

TITLE: "Semiconductor Switches and Logic Gates in Integrated Circuit Activators"

SOURCE: Peking WU-HSIEN-TIEN [RADIO] in Chinese No 9, Sep 77 pp 7-9

ABSTRACT: The author first explains the working principles of semiconductor switches as the most basic unit of integrated circuit logic gates which constitute many integrated circuit activators of complex circuits, using very simple language with illustrations. Then, he introduces circuits of transistor-transistor-logic (TTL), metal-oxide-semiconductor (MOS) and complementary metal-oxide-semiconductor (CMOS) as the three widely used logic gates and corresponding semiconductor switches in practical activator circuits. To enable the reader to easily understand such devices and circuits, the authors converts them into simplified switch models and model circuits composed of switches. This is a simple and direct visual method of explanation. He concludes his article by introducing the Schottky barrier diode (SBD) as a special diode completely free from carrier storage effect, which is a key unit in the present popular high-speed TTL circuit with the delay time of transmission as short as one millimicrosecond.

AUTHOR: None

ORG: This Journal

TITLE: "Electronic News Briefs"

SOURCE: Peking WU-HSIEN-TIEN [RADIO] in Chinese No 9, Sep 77 p 10

ABSTRACT: This section contains four news briefs on new electronic products, namely: 1) a transistorized pictorial signal generator Model XT-2 which can produce 12 sound channels of three full-scale TV video frequency (465 KHz and 1 MHz AM) signals and four audio frequency (1 KHz) signals, for checking TV receivers and various electronic devices, developed by the Hunan Shaoshan Television Factory; 2) a writing telephone which can transmit not only voice signals but also written words and drawings, of which a transceiver model has been developed by Peking Long-Distance Telecommunication Factory; 3) a standard frequency checker Model BP-2 for standard measurement of time and transistor oscillator checking, developed by Shih-chia-chuang Radio Plant No 4; and 4) a digital interference electro-therapy machine Model XL-1 for low-frequency electro-therapy, developed by Hsing-tai District Broadcasting and Motion-Picture Equipment and Repair Plant.

AUTHOR: K'0 An-jen [4430 1344 0088]

ORG: Department of Physics, Central China Normal College

TITLE: "Use a 23 CM Picture Tube in a 35 CM TV Receiver"

SOURCE: Peking WU-HSIEN-TIEN [RADIO] in Chinese No 9, Sep 77 pp 11-12

ABSTRACT: The author explains how to replace the damaged 35 cm picture tube with 70 degree angle of deflection in a TV receiver with a 23 cm tube with 90 degree angle of deflection. The TV receivers mentioned are Chinese made sets of models Shanghai Brand 104 and Peking Brand 823. With a smaller picture tube, there will be some keystone distortion which may be corrected by adjusting the magnet. It is necessary to change the voltage of the tube filament and lower the high voltage and the voltage of the tube accelerator and focusing anode. A new socket should be installed for the smaller tube. The circuit of the brightness control needs slight attention. A new clamp made of sheet iron is required for the smaller 23 cm picture tube. The deflection coil must be placed close to the neck of the tube.

AUTHOR: None

ORG: Tan-tung Television Parts Factory, Shanghai Radio Plant No 9 and Shanghai Interstellar Radio Plant

TITLE: "Jointly Designed: A Transistor Independent Fine-Tuning Frequency Channel Selector (Continued)"

SOURCE: Peking WU-HSIEN-TIEN [RADIO] in Chinese No 9, Sep 77 pp 12 and 16

ABSTRACT: This article is a continuation of the series under the same title. It contains some information on checking and adjusting the channel selector. It begins with checking the AGC voltage by means of a sweep-oscilloscope to adjust the coupling of hf coils of 12 channels of the selector. Then, it explains the method of tuning the general curve and the output curves of hf amplifier and mixer. The differences of gain of all channels are to be calculated from readings of output fading of the sweep-oscilloscope. Two diagrams show the forms of the hf amplification curve and the general curve. Two tables show parameters of the induction coils of the 12 channels and other units.

AUTHOR: WANG Te-yuan [3769 1795 3283]

ORG: None

TITLE: "The Assembling and Tuning of Black-White Television Sets;  
9. The Channel Selector"

SOURCE: Peking WU-HSIEN-TIEN [RADIO] in Chinese No 9, Sep 77 pp 13-16

ABSTRACT: This is the continuation of a long series under the same title, by a worker. The article contains two parts: 9. The Channel Selector and 10. The Structure and Layout of the Complete Set. The author presents a circuit diagram of the channel selector with electronic tuning, which consists of the three units of the hf amplifier, the mixer and the local oscillator. A table gives the winding data of coils of the selector's 12 channels. A plated circuit diagram of the 12-channel selector is also given. Part 10 explains proper methods of assembling a television receiver, concerning the arrangement and layout of the component parts, the line wires of various units, the electron-tubes, coils and transformers. Finally, the author gives some instructions on using printed-circuit plates and metal base plates for assembling.

AUTHOR: KAO Yu-shu [7559 3768 2579]

ORG: None

TITLE: "Talks on Mercury-Vapor Rectifier Tube"

SOURCE: Peking WU-HSIEN-TIEN [RADIO] in Chinese No 9, Sep 77 pp 17-18

ABSTRACT: This article is related to rural wired broadcasting. It consists of two parts. In the first part, the author gives a simple explanation of the function of a mercury-vapor rectifier in comparison with a vacuum rectifier tube. In the second part, he explains at some length certain points for attention in the practical use of such rectifiers. Two tables show the basic data of two rectifiers in common use, the EG1-0.3/8.5 (866) and the EG1-1.25/10 (872). The user is advised to follow this data and take precaution against incorrect voltage. Special care should be taken to prevent the occurrence of a reverse arc in the mercury-vapor rectifier tubes, which will cause malfunction and even shorten the life of rectifier tubes. Any changes in color of the glow inside a rectifier tube indicates either short-circuiting or overloading. When the light blue glow is fading, it is the sign of aging.

AUTHOR: YEH Jui-yu [0673 3843 0645]

ORG: Kwangsi Chuang Autonomous Region Broadcasting Bureau

TITLE: "An Exploratory Discussion on Raising the Efficiency of Single Wire Transmission"

SOURCE: Peking WU-HSIEN-TIEN [RADIO] in Chinese No 9, Sep 77 pp 19 and 32

ABSTRACT: This article is related to rural wired broadcasting. It consists of two parts: 1) the advantages and disadvantages of single wire transmission, and 2) measures of improvement. The author states that at present most broadcasting lines of commune amplifier stations connecting loudspeakers in consumer households are still of single wire transmission, with earth as another lead to form the circuit of audio-frequency current. Its advantages are simple construction and material economy; however, one of its disadvantages is the loss of audio-frequency power in the earth connections. The author suggests several remedies by either eliminating earth connections from transmitting and receiving transformers or adjusting the number of loudspeakers connected to receiving transformers at the consumer's end.



AUTHORS: HSU Pai-ling [1776 2672 7881]  
YU Chia-sheng [0151 1367 0581]

ORG: Nanking No 2 Radio Parts Plant

TITLE: "Designing and Making of Simple Combination-Type Speaker Boxes"

SOURCE: Peking WU-HSIEN-TIEN [RADIO] in Chinese No 9, Sep 77 pp 21-23

ABSTRACT: The article states that at present the loudspeaker manufacturing plants in China are turning out mostly combination speaker boxes designed for theatrical use, so that amateur radio workers have to design and make their own hi-fi speaker boxes. A table shows the products of Nanking Radio Parts Plant No 2, including speakers of full frequency range and speaker units of low, medium and high frequencies for combination uses. Another table shows dimensions of boxes for speakers of various diameters, with a sketch showing the construction. For speaker combination of two frequency bands, it is necessary to design and make a frequency divider. The article gives the method of calculation and a table showing data on coils and capacitors of dividers for two speakers of 8 and 16 ohms of impedance. Finally, it gives a few points for attention on assembling and test tuning.

AUTHOR: CH'EN P'eng-fei [7115 7720 7378]

ORG: None

TITLE: "A Small Instrument for Checking High-Frequency Property of Transistors"

SOURCE: Peking WU-HSIEN-TIEN [RADIO] in Chinese No 9, Sep 77 pp 24-25

ABSTRACT: The author explains that the requirement of high frequency transistors in TV receivers is very strict, and that this small instrument may be used to compare and determine hf characteristics of transistors, check the reverse voltage of the collector of a transistor and measure the d c amplification factors of transistors. The article shows a circuit diagram of the instrument. A 4-pole 5-throw switch is used to select circuits for testing NPN and PNP transistors. The instrument includes a micro-ammeter for reading. It works on 12 volt d c as power supply. The article is geared to beginning students.

AUTHOR: None

ORG: Hopei Province Chaohsien County Metals and Sundries Company Repair and Fitting Department

TITLE: "A Simple High-Frequency Signal Generator"

SOURCE: Peking WU-HSIEN-TIEN [RADIO] in Chinese No 9, Sep 77 pp 25-26

ABSTRACT: This is the second article for beginners who need a hf signal generator for repairing and checking radio receivers. The article gives a circuit diagram of the generator which consists of an audio-frequency oscillator, an emitter output unit and a high-frequency oscillator. The emitter output unit, located between the af oscillator and the hf oscillator, is used not only to match the impedance of these two oscillators but also to prevent them from interfering with each other. The af oscillator is used to tune the signal of the hf oscillator so that the generator can produce the 465 KHz intermediate frequency, the medium wave range frequencies (525 KHz to 1620 KHz) and the three tracking frequencies of 600 KHz, 1000 KHz and 1510 KHz of carrier signals in common use. An oscilloscope is used for checking frequencies of the generator in comparison with a standard frequency meter.

AUTHOR: SHIH Kuo-fan [2457 0948 5400]

ORG: None

TITLE: "A Home-Made Push-Key Wave-Range Switch"

SOURCE: Peking WU-HSIEN-TIEN [RADIO] in Chinese No 9, Sep 77 pp 27-28

ABSTRACT: This is the third article for beginners. The author, a worker, says that he has made the switch with waste material for transistor receivers and signal generators. He explains the construction of the switch with schematic diagrams and pictures to show how it works. Some drawings show exact dimensions of parts used. The four keys are made from colored handles of old plastic, toothbrushes. Springs and other parts can be made from odds and ends in the junk box. The author also gives details of assembling the switch and adjusting its mechanism. It is claimed that the switch has reliable contact points and large distributed capacity and may be used in common circuits under 20 megacycle frequency.

AUTHOR: LIN Tsai-jung [2651 0961 2837]

ORG: None

TITLE: "Use an Old Enclosed Gang Condenser to Make a Fine-Tuning Condenser"

SOURCE: Peking WU-HSIEN-TIEN [RADIO] in Chinese No 9, Sep 77 p 29

ABSTRACT: This is another article for beginners. To make a transistor superhet TV high-frequency head, one needs a fine-tuning condenser of about 0.5/3 mmfd for tuning the local oscillator. The author explains how he made one from an old and used enclosed gang condenser taken down from a transistor radio receiver being repaired. He gives details of the working process with an elaborate illustration.

AUTHOR: LI Wang [2621 2598]

ORG: None

TITLE: "Chart of RC Values of Spark-Quenching Circuits for Inductive Load Contact Points"

SOURCE: Peking WU-HSIEN-TIEN [RADIO] in Chinese No 9, Sep 77 p 32

ABSTRACT: This article explains the chart on the inside of the back page. It states that when switches with contact points are used, such as relay switches and reed switches, discharges of sparks always occur at the moment when the contact points close or open, which will damage the contact points and prevent the circuits from working properly. To protect the contact points, an absorbing circuit of resistance and capacity is connected across the two ends of the load. The chart shows the values of resistors and capacitors to be used for such circuits. Proper values can be found from the major scales and verified by checking with the lower pair of minor scales.

9039

CSO: 4009

AUTHOR: HSIA Yuan-fu [1115 0337 1788]

ORG: None

TITLE: "An Introduction to Integrated Computational Amplifier"

SOURCE: Peking WU-HSIEN-TIEN [RADIO] in Chinese No 10, Nov 77 pp 2-4 and 24

ABSTRACT: A computational amplifier is essentially a high gain d c amplifier with negative feed-back. This article describes the basic performance parameters of the computational amplifier and briefly discusses its computational capability. Specifically, the following parameters are introduced: 1) input off-set voltage and off-set current; 2) input bias current; 3) open-loop voltage gain; 4) common-mode reduction ratio; 5) input and output impedances; 6) temperature drift; 7) common-mode input range; and 8) peak output voltage and peak output current. The accurate control of the amplification factor by adding a feed-back network to the amplifier is explained. The basic operations of a computational amplifier, i.e., addition, subtraction, phase reversal, ratio operation, and integration-differentiation are also illustrated. In addition, other applications of the computational amplifier such as conversion of a milli-ammeter to a micro-ammeter, multiple frequency oscillators, and linear detectors are briefly discussed.

AUTHOR: CHANG Kuo-chun [1728 0948 1813]

ORG: None

TITLE: "The Family of Silicon Rectifier Components"

SOURCE: Peking WU-HSIEN-TIEN [RADIO] in Chinese No 10, Nov 77 pp 5-6

ABSTRACT: The conventional rectifier is a diode transistor made of silicon single crystal which has property of converting a c current into d c current. In recent years, many new silicon rectifier components have been developed to meet the requirements of special applications. In this article, several members of this family of silicon rectifier components are introduced: 1) the avalanche silicon rectifier components, which exhibit the P-N junction avalanche effect; 2) the high speed silicon rectifier components which are designed for high frequency applications; 3) the high temperature silicon rectifier components; 4) the silicon rectifier components designed for automobile electric motors; 5) high-voltage silicon piles which are used in high-voltage d c electric equipment; and 6) single-phase or three-phase silicon rectifier bridge circuits.

AUTHORS: JEN Chi-chung [0117 1015 6850]  
T'AN Sung [6223 2646]  
YAO Hung-pin [1202 7703 6333]

ORG: None

TITLE: "Discussions on Long Time-Delay Circuit Using Insulated-Grid Field Effect Transistors"

SOURCE: Peking WU-HSIEN-TIEN [RADIO] in Chinese No 10, Nov 77  
pp 7 and 6

ABSTRACT: In response to an article "Long Time-Delay Circuit Using Insulated-Grid Field Effect Transistors" which appeared in the 1976 No 8 issue of this journal, several readers have written to offer their experiences with the circuit. The specific topics discussed include: 1) modification of the circuit to improve its reliability and to improve the accuracy of time-delay control; 2) modification of the circuit to reduce leakage current; and 3) the design of an "electric discharge" type long time-delay circuit with application for time-controlled heating units.

AUTHOR: None

ORG: None

TITLE: "News in Electronics"

SOURCE: Peking WU-HSIEN-TIEN [RADIO] in Chinese No 10, Nov 77  
p 8

ABSTRACT: A number of newly developed electronic instruments are introduced. They include: 1) the BJ-10 electronic linear accelerator which is developed jointly by the Peking Rectifier Factory, the Department of Engineering Physics of Ch'ing-hua University, and the Peking Cancer Institute; it is an effective medical instrument for cancer treatment and is capable of generating 8 Mev X-rays and electron rays; 2) the KKG-3 controllable silicon constant voltage potentiometer which is developed jointly by the Fukien Institute of Material Structure and the Shan-min City Radio No 2 Factory; 3) the SSX-200 underwater television system which is developed by the Hsia-men Electronic Instrument Factory; 4) the KJY-1 laser direction indicator for mining applications; it is developed jointly by the Physics Department of the Fukien Teacher's College and the Fukien Optical Instrument Factory, and has an effective range of 500 m.; 5) the YO2-7 impact and vibration measuring instrument, which is developed by the Fuchou Radio Factory.

AUTHORS: LIU Yuan-chin [0491 0337 6651]  
LI Chin-ch'un [2621 6930 2504]

ORG: None

TITLE: "Important Characteristics of Commonly Used Domestic High Frequency Transistor Triodes"

SOURCE: Peking WU-HSIEN-TIEN [RADIO] in Chinese No 10, Nov 77  
p 19 and inside back cover

ABSTRACT: The important parameters of commonly used domestic high frequency transistor triodes are compiled and tabulated on the inside back cover of this issue. These transistors are of germanium PNP type and are primarily used in medium and low power applications such as frequency conversion circuits, I.F. amplifier circuits, oscillator circuits, and high frequency amplifier circuits. The tabulated parameters include: the maximum allowable power dissipation at the collector, the maximum collector current, the current amplification factors, and the characteristic frequency. The test conditions for two of the transistors, the 3AG1 and the 3AK20, at a temperature of 25 degrees C are also presented.

AUTHOR: LU Jui-feng [7120 6904 6912]

ORG: Pu-t'o County People's Broadcasting Station

TITLE: "Improvement of the Protective Circuit of the 'Hungch'i-100' Transistor Amplifier"

SOURCE: Peking WU-HSIEN-TIEN [RADIO] in Chinese No 10, Nov 77  
pp 23 and 30

ABSTRACT: In this article, the author suggests certain modifications to the protective circuit of the Hungch'i model 100 transistor amplifier in order to avoid intermittent operations of the amplifier under overload conditions. The modifications consist of adding a 47 kilo-ohm potentiometer to the circuit and increasing the capacity of one of the condensers, as well as tapping the bias voltage of the BG collector from an unstabilized negative 24-volt source. The modified circuit not only eliminates the problem of intermittent operation, but also improves its protection capability against overload.

AUTHOR: LI Chen-yuan [2621 4176 0337]

ORG: None

TITLE: "The Use of Transistor Radio as a High Temperature Warning Device"

SOURCE: Peking WU-HSIEN-TIEN [RADIO] in Chinese No 10, Nov 77 p 24

ABSTRACT: A conventional transistor radio can be easily converted into a high temperature warning device by adding to the radio circuit a positive feed-back circuit which consists of a capacitor, a resistor, and a temperature sensing device(e.g. a mercury thermometer). When the sensed temperature is below the threshold value, the radio operates normally; however, if the temperature exceeds the threshold, the feed-back circuit is closed and an alarm is activated. In this article, the procedure of conversion is illustrated using the Feng-lai model 601 radio as an example. Specifically, the circuit diagram of the pre-amplifier, the power amplifier, and the feed-back circuit is presented. Instructions for installing the feed-back circuit and for testing positive feed-back are also provided.

AUTHOR: None

ORG: None

TITLE: "Illustrations of Front and Back Covers"

SOURCE: Peking WU-HSIEN-TIEN [RADIO] in Chinese No 10, Nov 77  
front and back covers, inside front cover

ABSTRACT: Many Chinese-made electronic products were displayed at the national "Follow the Industrial Leader of Tach'ing" exhibit. One of the products was a satellite communication station shown on the front cover of this issue. Other examples include: the terminal of picture-phone, a diagnostic center for analyzing the performance of automobile engines, a dual-head color scanner for detecting tumors, an infrared forest fire detector, a microwave railroad communication and control unit, and an instrument for diagnosing heart disease, as shown on the inside front cover. The back cover of this issue shows a picture of the BJ-10 electronic linear accelerator for cancer treatment.

3012

CSO: 4009

ACTA ZOOLOGICA SINICA

AUTHOR: None

ORG: Department of Pharmacology and Department of Anatomy, First Medical College of Shanghai

TITLE: "Pharmacological Studies On the Contraceptive Injection of Megestrol Acetate"

SOURCE: Peking TUNG-WU HSUEH-PAO [ACTA ZOOLOGICA SINICA] in Chinese Vol 23 No 3, Sep 77 pp 231-237

EXCERPT FROM ENGLISH ABSTRACT: Megestrol acetate is the main constituent of the short-acting "oral contraceptive tablet No 2." In the present investigation, it was shown that an injection of water suspension of micro-crystals of megestrol acetate exerted a remarkable long-acting antioviulatory effect in rabbits. The ED<sub>50</sub> that produced a long-acting effect lasting for 16 days was determined to be 0.94 mg/kg by intramuscular injection and 0.42 mg/kg by subcutaneous route. Under similar conditions, the ED<sub>50</sub> of another long-acting steroid, progesterone caproate (in oil solution), was found to be 24.3 mg/kg. A subcutaneous dose of 30 mg/kg of megestrol acetate was 100% effective in contraception for as long as three months.

AUTHOR: None

ORG: Department of Pharmacology and Department of Biochemistry, First Medical College of Shanghai

TITLE: "Influences of High Dosage of Megestrol Acetate On Liver Function and Serum Lipids In Experimental Animals"

SOURCE: Peking TUNG-WU HSUEH-PAO [ACTA ZOOLOGICA SINICA] in Chinese Vol 23 No 3, Sep 77 pp 238-242

TEXT OF ENGLISH ABSTRACT:

Experiments reported here showed that three months after the start of intramuscular injection of water suspension of megestrol acetate at the dosage of 100 mg/kg once a month, serum GPT and AKP of rats elevated significantly in comparison with those of the control group. In rabbits under similar conditions the serum AKP and GPT also elevated at the dosage 50 to 100 times of that used clinically. However, it did not exert any significant effect on the biliary clearance of BSP in rats, rabbits and dogs.



High doses of megestrol acetate could accelerate the gain of body weight in rats. On the other hand, all of the dogs injected with megestrol acetate suspension at the dosage of 25 or 150 mg/kg intramuscularly once a month resulted in distinctly overweight and at the same time, serum cholesterol, triglyceride and phospholipid increased significantly. However, megestrol acetate injected intramuscularly didn't affect the body weight and the serum lipids in rabbits.

The mechanism and the clinical significance of this finding have been discussed.

AUTHOR: CHIANG T'ien-yi [5592 1131 7535]  
KAO K'uei-hsiung [7559 7608 7160]  
CHOU Kuan-chung [0719 0385 0022]  
CHU Yen-p'ing [2612 1484 1627]  
TS'AI Shih-p'ing [5591 0099 5493]

ORG: All of Shanghai Institute of Experimental Biology

TITLE: "Changes in Urinary Pregnandiol and Estriol Excretions During Second Trimester Abortion Induced By Trichosanthin--A Protein Extracted From Radix Trichosanthei"

SOURCE: Peking TUNG-WU HSUEH-PAO [ACTA ZOOLOGICA SINICA] in Chinese Vol 23 No 3, Sep 77 pp 243-254

TEXT OF ENGLISH ABSTRACT: The amounts of urinary pregnandiol and estriol during abortion in 14 second trimester pregnant women, induced by 5-12.5 mg of Trichosanthin, were estimated by gas-liquid chromatography. The plant protein was injected intramuscularly in 12 women and intraamniotically in two.

In all the cases studied, urinary hormone excretion increased temporarily after the administration of the drug; then decreased gradually to an extremely low level before and after parturition.

[continuation of TUNG-WU HSUEH-PAO Vol 23 No 3, Sep 77 pp 243-254]

The relationship between the changes of urinary hormone levels and the effects of Trichosanthin upon placental function was discussed.

AUTHOR: WANG Shih-p'ing [3769 1102 1627]  
CHANG Tso-kan [1728 0155 1626]

ORG: WANG of the Department of Histology and Embryology, Hsin-chiang Medical College, Urumchi; CHANG of the Chinese Academy of Medical Sciences, Peking

TITLE: "Histochemical and Histologic Studies On the Development of Mouse Liver"

SOURCE: Peking TUNG-WU HSUEH-PAO [ACTA ZOOLOGICA SINICA] in Chinese Vol 23 No 3, Sep 77 pp 255-266

EXCERPT FROM ENGLISH ABSTRACT:

The livers of 11—19 days mouse embryos and new-born mice 1 day to 1—4 weeks after birth were used for the histochemical and histologic studies. This paper presents the observations on DNA, RNA (methyl green-pyronin stain), glycogen (McManus' PAS method), glucose-6-phosphatase (Chiquoine's method), alkaline (Danielli's modification of calcium-cobalt method), acid (MacDonald's modification of lead-nitrate method), phosphatases, mitochondria (Fain and Wolfe's basic fuchsin stain), neutral fat (Baker's sudan black B method), succinodehydrogenase (Goebel's neotetrazolium method), sulfhydryl (-SH) and disulfide (S-S) (Barnett and Seligman's neotetrazolium method).

AUTHOR: T'ANG Chung-chang [0781 0112 3864]  
T'ANG Ch'ung-t'i [0781 1504 1912]

ORG: Both of the Parasitology Research Laboratory, Hsia-men University, Fu-chien

TITLE: "The Biology and Epidemiology of Eurytrema Coelomaticum (Giard et Billet, 1892) and Eurytrema Pancreaticum (Janson, 1889) In Cattle and Sheep In China"

SOURCE: Peking TUNG-WU HSUEH-PAO [ACTA ZOOLOGICA SINICA] in Chinese Vol 23 No 3, Sep 77 pp 267-282

EXCERPT FROM ENGLISH ABSTRACT: The present article reports on the biology and epidemiology of Eurytrema coelomaticum and E. pancreaticum in China. The studies have been undertaken for many years in Fu-chien, South China, for E. coelomaticum in cattle, while special investigations were conducted in Shuang-liao steppes in Western Chi-lin province bordering Meng-ku, where E. pancreaticum is highly endemic. The incidence of infection for E. coelomaticum in dairy cows is 62.20-72.22% and in ordinary cattle used for tilling the land in several people's communes in the vicinity of Fu-chou is 14.22-45.50%. The incidence of infection in sheep in Shuang-liao steppes is 16-73% (average 51.07%).

AUTHOR: WU Chieh [6762 2212]

ORG: Jung-ch'ang Swine Breeding Experimental Station, Szechuan Provincial Academy of Agricultural Sciences

TITLE: "Graphidiella Szechuanensis Sp. Nov. Trichostrongylidae Nematodai"

SOURCE: Peking TUNG-WU HSUEH-PAO [ACTA ZOOLOGICA SINICA] in Chinese Vol 23 No 3, Sep 77 pp 283-285

TEXT OF ENGLISH ABSTRACT: Graphidiella szechuanensis sp. nov.

The adult worms are red in color when alive. The cuticle is provided with a number of longitudinal lines and transverse striations. There are two lateral, two dorsolateral and two ventro-lateral papillae at the anterior end of the body. Mouth collar present. One dorsal tooth is present in buccal cavity. The male is 11.6-15.6 mm and the female is 18.1-18.8 mm in length. Spicules alated equal or subequal, about 0.46-0.53 mm long. Gubernaculum, telamon and genital cone papillae are absent. The vulva is situated at the posterior part of the body. There is a distinct muscular bulb on each side of the ovijector. There is a digitate papilla and also a pair of lateral papillae on the tip of the tail.

Host: Ochtona sp.

Location: Stomach.

Distribution: Shih-ch'u and Se-ta, Szechuan Province.

[continuation of TUNG-WU HSUEH-PAO Vol 23 No 3, Sep 77 pp 283-285]

Date: 1963.

Type specimens: Deposited in Jung-ch'ang Swine Breeding Experimental Station,  
Szechuan Provincial Academy of Agricultural Sciences.

AUTHOR: CHIANG Hsieh-chih [5592 3610 3112 ]

ORG: Institute of Hydrobiology, Hupei Province

TITLE: "On One New Species and Four New Records of Chinese Freshwater Cladocera"

SOURCE: Peking TUNG-WU HSUEH-PAO [ACTA ZOOLOGICA SINICA] in Chinese Vol 23 No 3,  
Sep 77 pp 286-289

EXCERPT FROM ENGLISH ABSTRACT: The present paper deals with the descriptions of one new species and four new records of freshwater Cladocera collected from various localities of China. The species Limnospila frontosa Sars, Diaphanosoma perarmatum Brehm, Wlassicisia pannonica Daday, and Drepanomacrothrix cornuta (Daday) are recorded for the first time for China. The diagnosis of the new species, Ceriodaphnia cornigera sp. nov., is given.

AUTHOR: K'UANG P'u-jen [0562 3302 0086]

ORG: Yunnan Institute of Zoology

TITLE: "Parasitic Copepods From Freshwater Fishes of China I. On the Genus Lamproglena (Lernaeidae) With Description of Five New Species"\*

SOURCE: Peking TUNG-WU HSUEH-PAO [ACTA ZOOLOGICA SINICA] in Chinese Vol 23 No 3, Sep 77 pp 290-302

EXCERPT FROM ENGLISH ABSTRACT: The present paper presents a systematic study on Chinese parasitic copepods of the genus Lamproglena. The material used has been collected from many localities of China, especially from Yunnan in recent years. Altogether eight species are recognized, among which five species are considered new to science.

All type specimens are deposited in the Yunnan Institute of Zoology.

\*Comrade YIN Wen-ying [1438 2429 5391] of the Shanghai Institute of Entomology helped in this work.

AUTHOR: LIU Hsi-hsing [0491 6932 5281]

ORG: Institute of Oceanology, Academia Sinica

TITLE: "Diagnoses of New Species of Naticidae (Prosobranchia) From the Chinese Coast"

SOURCE: Peking TUNG-WU HSUEH-PAO [ACTA ZOOLOGICA SINICA] in Chinese Vol 23 No 3, Sep 77 pp 303-312

EXCERPT FROM ENGLISH ABSTRACT: This paper deals chiefly with eight new species of Naticidae (Prosobranchia) collected from the coastal regions of the China Sea. The types of these new species are all preserved in the Institute of Oceanology, Academia Sinica. Besides, there are 19 species which are recorded for the first time in China.

AUTHOR: WU Lu [0124 1774]

ORG: Department of Biology, Tsun-yi Medical College

TITLE: "On the Intraspecific Categories of Aqkistrodon Halys in China"

SOURCE: Peking TUNG-WU HSUEH-PAO [ACTA ZOOLOGICA SINICA] in Chinese Vol 23 No 3, Sep 77 pp 320-323

TEXT OF ENGLISH ABSTRACT: It is a puzzling problem as to whether or not to divide Aqkistrodon halys (Pallas) in China into different subspecies. The problem has been debated for more than 60 years. There are two schools, the lumpers and the splitters. The reasons for dividing the present species into subspecies or uniting the present subspecies into a single variable species were enumerated by Pope (1935). According to the 75% rule for the discrimination of subspecies and the standard of subspecific difference (coefficient of difference) by Mayr et al (1953), the author has reached the conclusion that Aqkistrodon halys in China, with the exception of A. h. blomhoffii (Boie) in Taiwan province, should be divided into two subspecies, i.e., Aqkistrodon halys intermedius Strauch and A. h. brevicaudus Stejneger.

AUTHOR: CHAO Cheng-chieh [ 6392 2973 7132]

ORG: Natural Reserve, Ch'ang-pai Shan, Chilin Province

TITLE: "Ecological Studies of the Hazel Grouse in Ch'ang-pai Shan Area"

SOURCE: Peking TUNG-WU HSUEH-PAO [ACTA ZOOLOGICA SINICA] in Chinese Vol 23 No 3, Sep 77 pp 324-335

TEXT OF ENGLISH ABSTRACT: This paper presents our ecological studies of the hazel grouse (Tetrastes bonasia amurensis) inhabiting Ch'ang-pai Shan, Chilin Province. Results obtained are summarized below.

1. The hazel grouse inhabits mostly regenerative poplar-birch forests, mixed forests of conifers and broad-leaved species, and coniferous forests. Data concerning their vertical distribution and vertical migration during different seasons are given in the paper. They are very gregarious, except in the breeding season.
2. The population density of the grouse is lowest from January to May, and highest in July, August and November.
3. The hazel grouse take mainly vegetative foods, but they also feed on insects and small animals, especially in the breeding season.
4. The breeding period of the hazel grouse is from April to July. Their nest is mostly a mere scratching under the shelter of trees or bushes, and lined inside with fallen leaves. Only one clutch is laid in a year. The clutch consists of 8-14,

[continuation of TUNG-WU HSUEH-PAO Vol 23 No 3, Sep 77 pp 324-335].

generally 11-12 eggs. The eggs are oval. Twenty-four eggs averaged 38.2 x 28.9 mm in size.

5. The growth rate of the young is rather fast. They leave the nests at the beginning of June, their body weight increasing to 150-200 g by the beginning of July. In September, they exceed 300 g in weight, approximating the body weight of adults. The body weight reaches its maximum in November, averaging above 400 g.

6. In the paper, the hunting season and hunting methods of the hazel grouse are also discussed.

\*Comrades CHANG Hsing-lu [1728 5281 4389] of our bureau and CHAO Hung-ch'uan [6392 3163 0356], YANG Yeh-ho [2799 6851 0735] and CHANG Yen-ch'eng [1728 1750 2052] aided in identifying stomach contents.

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